Medical Lib

HYGEIA

A JOURNAL OF INDIVIDUAL AND COMMUNITY HEALTH

Published by the American Medical Association
535 N. Dearborn St., Chicago

July, 1925 *25 Cents*

Food After Forty
Fresh Fruit in the Diet
Polluted Harbors and Beaches

E.L.B

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HYGEIA

A JOURNAL OF INDIVIDUAL AND COMMUNITY HEALTH

Published by the American Medical Association
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PROMISED FOR AUGUST

I REDUCE—*Every one who is from two to 200 lbs. overweight will want to read this article by Dr. Lydia Allen DeVilbiss. Dr. DeVilbiss tells the method by which she went down, down, down from 190 to 180, from 180 to 170, from 170 to 160, and from 160 to 150.*

THAT WORMY CHILD—*Highly entertaining, yet strictly scientific, is Dr. Park J. White's article. This children's physician warns parents about not giving a child bad treatment for worms that do not exist, and about fighting to the finish with proper methods when worms actually are present.*

THE BABY'S TEETH—*Do you know that when a baby is born its jaws contain, partly developed, all of the temporary teeth and almost all of the permanent ones? Dr. Frederick Bogue Noyes, an authority on children's teeth, starts in the next issue the first of a series of instructive articles.*

Contributions to HYGEIA *are considered, and, if accepted, paid for. Stamps for the return of unaccepted manuscripts should be enclosed. All communications should be addressed to* HYGEIA, *535 North Dearborn Street, Chicago, Illinois.*

CONTENTS

COVER—BATHE IN SUNSHINE
Poster by Evelyn L. Binckley, Glenville High School, Cleveland, submitted in HYGEIA *health poster contest.*

PAGE

FRONTISPIECE—WHY RIP VAN WINKLE FELL ASLEEP 362
Velma West Sykes

FOOD AFTER FORTY 363
Mary Swartz Rose

POLLUTED HARBORS AND BEACHES 366
C. V. Craster

FRESH FRUIT IN THE DIET 370
Lulu G. Graves

LIGHTING THE HOME 374

THE SNAKE GARDENS OF BRAZIL 375
Howard Wakefield

THE BABY'S EYES 377
Edward Jackson

TRAVELING IN THE TROPICS 379
Kate Platt

HEALTH FOR THE SWIMMER 382

WHY CHILDREN ARE CROSS 384
Edith Lochridge Reid

HOW TO AVOID LEAD POISONING 387
Carey P. McCord

THREE SCORE AND TEN 390
Brock C. Hampton

LESSONS FROM THE ZOO 393
James Frederick Rogers

"HEALING" BY AUTOSUGGESTION AND MAGIC 397
Abraham Myerson

THE GINGERBREAD HOUSE 400
Rosanne Amberson

RIDDING THE HOUSEHOLD OF INSECT PESTS (PART III) 403
Louis Gershenfeld

HOW TO PUT ON WEIGHT 405

PLAIN FACTS ABOUT HEALTH AND DISEASE:
Health News of the Month 406
The Movie in Sex Education 407
Hygiene of Swimming 407
Testing the Vision of Motorists 407
Hypnotism 408
Another New Disease 408
Sleep and Sleeplessness 409
Typhoid Carriers 409
The Baltimore Health Pageant 410

THE WAY THEY STAND IN HEALTHYLAND 411
John T. Lemos

BOOK REVIEWS 412

HEALTH NEWS AND VIEWS 413

QUESTIONS AND ANSWERS 418

CURRENT HEALTH ITEMS 422

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WHY RIP VAN WINKLE FELL ASLEEP

Now here's the sad, sad story of
Old Rip Van Winkle's nap.
He slept for twenty years, 'tis said,
In some wild mountain gap.

When Rip was just a little boy
Each night up late he'd stay,
And lose such hours and hours of sleep
He drowsier grew each day.

And then when he grew up he found
He could hardly keep awake
So he lay down in the mountain gap
His sleep to overtake.

A moral this sad story tells,
For children young and old:
Don't be a Rip Van Winkle;
Go to bed when you are told.

—VELMA WEST SYKES.

FOOD AFTER FORTY

MARY SWARTZ ROSE

SIDE by side down the street slowly moved two of those peripatetic advertisements known as sandwich men. Over the gaunt frame of No. 1 the boards for which he was the "filling" drooped almost to a vertical position; over his companion, however, the brightly painted panels stood out like the gabled roof of a nice little shed. The contrast was sufficient to make the passer-by pause and read: "I do not eat at the Sign of the Prancing Horse" (No. 1); "I do eat at the Sign of the Prancing Horse" (No. 2).

The passer-by happened to be Mr. Forty-Plus. Lured by the promise of good things to eat, he made his way to the cheery little restaurant and seated himself down to dine. Immediately a plateful of home made biscuit, fresh from the oven, with butter in plenty engaged his attention and held it until the "dinner" appeared.

Of course a prosperous citizen like Mr. Forty-Plus would choose a steak of generous proportions, potatoes rolling in butter, a plump piece of apple pie capped with a mound of ice cream, and look with favor on a steaming cup of coffee into which he would presently put two heaping spoonfuls of sugar and at least a gill of cream.

The promise of the Falstaff under the sandwich board was fulfilled. Leaving a silver piece for the waiter, he proceeded to the cashier's desk and, as he thought, settled his account.

But a meal does not cease to exist with the paying of the man at the desk. There are others to reckon with, and they may have a great deal to say about it and may levy other charges on which our friend did not reckon when he gave his order.

The Kidney Brothers Speak

First there are Kidney Brothers, who always speak as one: "There, he's done it again! That is the sixth steak we have been called upon to dispose of within a week. It's just too much. Wouldn't you think he would have more consideration for two of his oldest friends? Here we go on, year after year, looking after his excretory interests and he never gives us a day off. We want to do our duty, but no respectable kidney should be imposed upon just because he is faithful.

"Why can't the Boss realize that he is a *grown man.* Does he think he has to be making body substance at the rate he needed to before he was 25? Doesn't he know that all he can store is fat and that too much of that is a liability and not an asset?

"A man needs to right-about-face in his food program after he passes 30. Then he approaches middle age, the time of achievement, the time to be prolonged. 'Increasing the span of life' practically means lengthening middle age at both ends, maturing early and declining late. We Kidney Brothers are important in that game. If we could get our day's work down to taking care of not more than a couple of ounces of lean cooked meat every day (instead of half a pound or more) and could be sure of a generous water supply (at least one quart a day) instead of

having to scrimp and scrimp and finally send out a waste product which always irritates us a little, we'd feel less like joining the I. W. W. And if in addition we were sent less salt and pepper and Worcestershire sauce we would be thankful."

Friend Liver at this point feels that a monopoly of the conversation by those who deal only in "end-products" is scarcely to be tolerated longer.

"Be calm, Tweedledum and Tweedledee," he speaks. "It has not been proved that all the good meat a man wants to eat will hurt him if you just stay on your job. Of course we all know you have a bad time if he has infected tonsils, or abscessed teeth or other dens of bacterial iniquity. But our Boss has had his 'foci of infection' attended to, so I am the one who should worry.

"From my earliest youth I have worked like a slave. I had to bear the brunt of it before the rest of you were grown up. At first I was proud of my labor. I knew that all young folks must have much more food in proportion to their size than older ones and I comforted myself with the thought that after twenty-five or thirty years of grinding I might be able to take life a little easier.

"As long as great platefuls of bread and butter and even considerable sugar were in immediate demand to keep a sixteen year old body machine running and wrestling and playing football, they made me no trouble. But now that the Boss has become portly and sedate and never leaves the house except in his car, what does he think he is going to do with the fuel he sends down? Does he expect me to help take care of it? His poor muscles are so smothered in fat that they are going into a decline. I heard Friend Heart declaring that the pressure in his system was getting above safety level and his work is much heavier than it used to be."

Not Feeding a Football Captain

"Why doesn't the Boss learn how much fuel he really needs for a machine that works so little, and change habits that are suited to a football captain? Pancreas feels the same about this—and what would happen if Pancreas should be disabled? He'd get thin enough then; and I'd hate to think of a nice fellow like him getting diabetes.

"They do say, you know, that there's a connection between that disease and overweight. At any rate, Pancreas' work is easier when the Boss does not eat too much. We'd like to put a sign on the scales in his bathroom, 'Do not let yourself weigh more than your proper weight at age 30.' Weight-watching is a great game nowadays. They play it on the babies, the runabouts and the school children to get them *up* to weight; now we'll play it on the grown-ups, to get them *down* to weight. There are some too thin, of course, but on the whole it is safer to be a bit overweight before 30 and a bit underweight after 30."

"By my thumps, that's so," interrupted Friend Heart. "I do feel something my doctor calls 'hypertrophy' and my piping system isn't in the best of repair all along the line. Since the Boss acquired a 'bay window' and a cushion for the back of his neck, and it's fat, fat, fat along every part of my system, I nearly burst trying to keep the pump going. Some dietitian ought to get after him. She'd teach him to count his calories, wouldn't she?"

"He might teach himself," said Pancreas. "It is all written in books, and children in the fourth grade at school learn them readily, and apply what they learn, too. In the meantime, he might improve matters a good deal by changing his plan of meals. Instead of going to the Prancing Horse restaurant for meat, potatoes, bread, butter and pie, he should go to a health restaurant in which he could get a 'vegetable plate,' some bran bread and some raw fresh fruit. Think how little *we* would have to pay for a luncheon like that!"

Wife, Too, Must Learn Calorie Counting

"But what about his home meals?" demanded Liver. "His wife is such a good cook and loves so to feed him well. She will undo at night all that's been accomplished in the daytime."

"She will have to take lessons from the dietitian, too. She has been so bent on filling the children up and giving everybody a good time, that she has not yet thought of the problem of middle age. By and by she too will 'arrive,' physiologically speaking, and then she will need to read the sign on the bathroom scales."

"Couldn't we draw up a set of suggestions, just to put them on the right track? You have to know about kinds of foods as well as amounts, don't you?"

This suggestion met with favor, and the following document resulted:

Recommendations of the Body Corporation to Mr. Forty-Plus

For breakfast:

- Some kind of fruit or fruit juice without sugar.
- A dish of cereal well supplied with bran (it can be bought and added to cooked breakfast foods) served with top milk and little or no sugar.
- An egg or a little bacon, if desired.
- One or two slices of whole wheat or bran bread. This can be toasted but should not be buttered. It can be thinly spread with butter as eaten.
- A cup of coffee with a small amount of cream and little or no sugar.

For luncheon:

- Two kinds of vegetable, not potatoes, served hot with salt and a little butter.
- A large serving (two or three times the ordinary amount) of a raw vegetable, such as cabbage, lettuce, celery, plainly dressed, i. e., without mayonnaise or other rich dressing.

One or two slices of whole wheat or bran bread and a little butter.
A glass of milk.

FOR DINNER:

A vegetable soup, if soup be desired (no thick soups).
A small serving of meat (not over two ounces of the lean cooked meat).
One plain potato.
A double serving of another vegetable, preferably a leafy vegetable.
No bread at all.
A glass of milk.
A single small serving of dessert.

N.B. The addition of some raw fruit or raw vegetable is desirable.

"Hooray," shouted Pancreas. "That will keep the cook from always tucking butter, sugar and cream into waffles, griddle cakes, salad dressings and all sorts of sauces, to say nothing of the fancy bread, pie and cake that she likes to make."

"Did you notice the milk?" chimed in Heart. "With all the fancy cooking cut out, he has to take his daily pint straight. I couldn't have that cut down, for I want my calcium."

"Will they do it?" sighed Lung. "I remember how I puffed for Mrs. Fat-and-Forty. She was 50 pounds too heavy and she really wanted to lose some of it because she did not like her look in knickers. At breakfast she was quite heroic—never ate a thing but fruit and coffee. At noon she often posed like a martyr, eating nothing at all. At night she felt she had earned the right to a full meal. But she did not lose weight, and all of us members of the Body Corporation were working the same as ever.

"Finally Stomach told us the secret. *She just didn't count any food eaten between meals.* Why should she remember the doughnuts and coffee in the middle of the forenoon? Or that lone pork chop that didn't seem worth putting in the refrigerator after luncheon? Or the biscuit and cake with the afternoon tea? She needed to learn that one wee chocolate caramel would be as much work for us as three good-sized potatoes, and that a fudge sundae at the drug store looks the same to us as the half of a pound loaf of bread."

Appeasing Friend Stomach

"I approve of the program," interposed Stomach, "but it will be hard for me to adjust myself to it all at once. I'm so used to being busy all the time. I shall feel queer."

"Cheer up," said Kidney Brothers. "If we get all the water we want, that will help you, too. When you give a kick the Boss can send a glass of water to calm your nerves."

"And think of the vegetables! By my lobes," exclaimed Liver, "they'll give you something to work on. There's no limit on the juicy ones, you know. Perhaps you will get a whole pound of asparagus; then you'll be busy for awhile."

"A little fat would be such a help."

"You'll get it. All we want is to keep it down to about two ounces a day. And didn't we say an egg or a bit of bacon for breakfast, mostly for your benefit?"

All objections being thus disposed of, the Body Corporation submitted its recommendations to the Boss. *What did he do with them?*

Marcella Steudel

International

Chicago River harbor by night

Polluted Harbors and Beaches

C. V. CRASTER

TO GAIN knowledge by experience is the only way of improvement when other methods are not available, but when applied to public health experience is at times so costly as to appear barbaric in the toll of suffering and death that it exacts.

The knowledge gained in recent years as to the need for care and protection of our city drinking water has come about in this costly way. The methods for providing pure water supplies in sufficient abundance to satisfy the needs of modern life were only evolved by sanitary engineers and scientists after widespread epidemic tragedies; these apparently were necessary to stimulate public authorities into the realization that something must be done to remedy the situation.

Unnecessary Epidemics Take High Toll

The history of public health abounds with the records of epidemics, nearly all preventable, which are the results of the pollution of river and harbor waters with the sewage from large cities.

One of the most terrifying outbreaks of disease occurred in the year 1892. In that year cholera had been prevalent in Eastern Europe and was spreading by means of the lanes of travel and commerce. In the middle of the summer, the disease appeared in Hamburg, Germany, which at that time had a population of 640,000; within a period of a little over two months, 17,000 cases were reported in the city with 8,605 deaths.

The cause of this epidemic was traced to the use of river water from the Elbe for the municipal supply. All the city sewage was discharged into the river within a short distance from the intake pumps. In the harbor at the time were many emigrants waiting transportation to America who had recently arrived from districts of Russia where cholera was raging.

This episode was a most potent instrument in showing the danger of obtaining a city water supply from a river grossly polluted with sewage.

In the same year America learned to its sorrow how typhoid fever can spread by the use of water polluted with sewage. As a result of obtaining its municipal water supply from the grossly polluted shores of Lake Michigan, the city of Chicago had 1,489 deaths from typhoid fever in that one year.

Water Supplies Now Safe

As a result of this and other disastrous experiences in using questionable water supplies, millions of dollars are now spent in this country, and justly so, to obtain the purest and best water for city use.

When, by reason of distance or geographical configuration, it is too costly to obtain a raw water—one which would not need any chemical or other treatment to make it safe—the supply is obtained from a source near by and is rendered safe by precipitation, decolorization and chlorination. Municipal water supplies in this country are now well guarded against contamination.

The results of this general policy have been signal in reducing the death rate from typhoid fever all over the country, so that the United States now compares favorably in this respect with the older and more established countries in its freedom from undue typhoid fever prevalence. Each year statistics show that the mortality rate from this disease is being pushed downward.

Another problem equally as formidable has arisen with the advent of sewerage systems and improper disposal of sewage. When cities were small, the nearest river or tidal bay usually provided an adequate way of taking care of city sewage. The original idea as to the propriety

MORE than a billion gallons of sewage is discharged into New York harbor each day. This sewage is untreated and it converts the harbor waters into little better than a common sewer.

Before Chicago built its drainage canal, there were 1400 deaths in a single year as a result of using sewage polluted water for drinking purposes.

American cities now have safe drinking water, but insanitary bathing beaches and polluted shellfish beds may be a menace.

International

Entering New York harbor

of discharging raw sewage matter into streams was, of course, influenced by the provision that no nuisance should arise that would hazard the health, welfare or safety of other cities along the same streams.

Engineers and chemists accepted the belief that, provided sufficient dilution of sewage took place, the motion and flow of the currents and tides would oxidize and change the waste impurities into harmless compounds. It is now generally conceded that the enormous sewage outlets from large cities, such as New York and Chicago, discharge so great a bulk of raw material as to tax severely the diluting and cleansing power of the water into which it is carried.

Harbor Pollution Is Enormous

At the present time harbor and coastal pollution is enormous. In New York alone, it is a fair estimate that over a billion gallons of crude sewage is discharged daily into the Hudson and the nearby waters of the bay. This sewage does not undergo any preliminary treatment at all and virtually converts the harbor waters into those of a common sewer.

Besides the sewage that is carried out to sea and that is conveyed by tides and currents to bathing beaches along the coast, there is an added half a million tons of garbage collected yearly from the metropolitan area that is taken out to sea and dumped off the shore of the bay.

The pollution of harbor waters is further intensified by the multitude of ships that discharge wastes and sewage into the river in their passage in and out of harbor. It can be truthfully said that the waters of the greater number of American harbors and coast towns are grossly and unduly polluted and that the limit of probable purification by dilution through tidal flow and currents has been much exceeded.

The importance or danger of oil pollution does not compare with the condition caused by sewage. In the case of the former it is a disagreeable interference with the comfort of coast resorts; but in the case of the latter it is a decided menace to the health, not only to the cities upon the shore, but to the country as a whole through the considerable danger to the food supply from possible contamination of oyster and other shellfish beds.

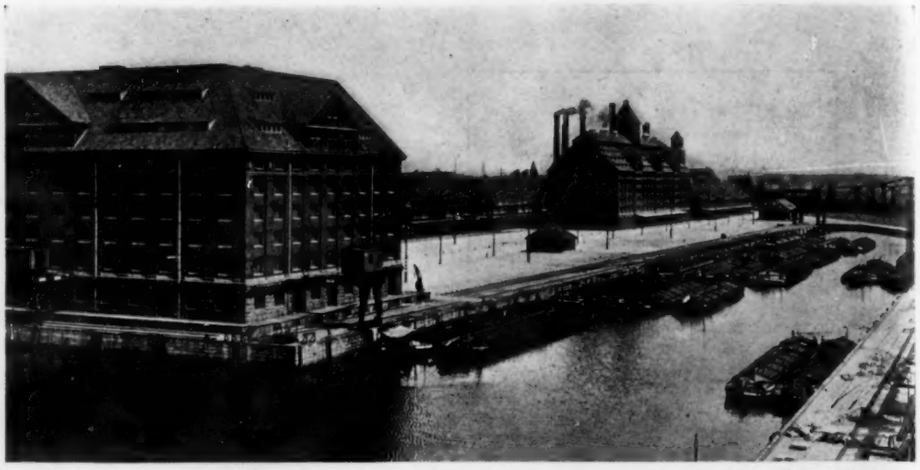
The treatment of sewage in Europe became a pressing problem many years ago, and various methods have been employed with success. The small volume of many European rivers upon whose banks large cities arose, their slow moving currents and the discharge therein of city sewage quickly produced impossible conditions of river water as far back as 1876, in which year the discharge of untreated sewage into nearby water was forbidden by law in England.

Methods Adopted in Europe

Kenwood of London, writing of the conditions as he saw them said, "During dry weather when the quantity of land water is slight, the displacement of sewage towards the sea is very slow (about a quarter of a mile a day) so that the sewage discharged on any particular day oscillates up and down the river with the tide and is continually receiving fresh increment. The sewage, too, that is discharged after high water on an ebbing tide will be carried up by the flowing tides above the outfall, and where neap tides are giving place to spring tides, the whole volume of discharged sewage is carried up higher and higher above the outfalls. The effect, too, of the sea salts in estuary water is to cause a precipitation of organic matters and a deposit of mud whilst the oxidation and purification processes are delayed by their presence."

The Royal Commission on Sewage Disposal in England reported in 1902 that "it is practicable

to produce by artificial processes alone sewage effluents which will not putrefy and which can be classed as good according to ordinary chemical standards and which might be discharged into a stream without fear of creating a nuisance." It further reported that bacteriology could not be relied upon to determine whether shellfish from suspected areas were infected with typhoid fever.



International

The city of Berlin treats its crude sewage upon 20,000 acres of farm land before allowing it to flow into the river Elbe. Paris, too, has adopted a method of broad irrigation, and the water in the Seine is pure.

Following these recommendations, London and Glasgow by a variety of processes began to sediment, precipitate and treat chemically and bacteriologically all their vast quantity of sewage before it was allowed to discharge into adjacent rivers.

Paris and Berlin Irrigate with Sewage

The cities of Paris and Berlin have adopted the method of broad irrigation; that is, crude sewage is allowed to flow over farm lands where purification takes place and the ground thus fertilized is used for raising crops. Berlin alone uses 20,000 acres of lands for this purpose. The results of this policy are so well repaid in the removal of odors and the stagnation of filthy harbor waters, as well as in improved health conditions, that the treatment of sewage is an accepted municipal duty in most foreign countries.

Probably the best and most scientific investigation of sewage treatment belongs to America. As a result of the Massachusetts state law of 1886, requiring the state control of the purity of all inland waters, an experimental station was established at Lawrence, Mass., by the state board of health. The results of the experiments showed that adequate purification of sewage was possible by simple methods such as sedimentation, sand filtration and broad irrigation.

At the present time, according to Professor S. C. Whipple, "more than thirty cities and towns in Massachusetts are now provided with works for subjecting their sewage to some form of treatment before discharging into the waters of the state."

The sewage collected from the Passaic Valley cities by the new trunk sewer, averaging one hundred million gallons daily, is screened and sedimented at Newark, N. J., before discharge into the New York bay at Robbins Reef. The

No untreated sewage is allowed to flow into the river Thames. London treats every gallon of its sewage by a variety of processes before it is allowed to discharge into this historic stream.

The river Clyde, at Glasgow, was once an open sewer. Now it receives only purified sewage and is no longer a menace to public health.

value of the methods in general use are thus stated by M. J. Rosenau:

Sedimentation removes 25 to 75 per cent. of bacteria.

Chemical precipitation removes 40 to 80 per cent. of bacteria.

Contact beds remove 80 to 90 per cent. of bacteria.

Disinfection removes 98 to 99 per cent. of bacteria.

Typhoid a Menace

The recent typhoid fever epidemics in New York City and Chicago have much in common. Both these cities have pure and safe water supplies. Milk and food, usually the carriers of intestinal diseases, are efficiently supervised and above suspicion in both instances. The actual origin of the cases has been definitely traced, the investigation clearly showing that in more than half the number, the victims had a history of eating shellfish from contaminated sources, within the incubation period of the disease.

The conditions for infection were undoubtedly present when tidal waters, bathing oyster beds, were found to be so badly contaminated with sewage that infection was not a matter of favorable or unfavorable currents, tides or winds, but a constant, possible menace to this food supply.

The problem of sewage purification for metropolitan areas will have to be solved sooner or later or the contaminated shellfish beds within hundreds of miles of the outlets must be abandoned and bathing facilities prohibited in all those resorts in which the water is shown to be unsafe and dangerous to pleasure seekers.

PRIZE CONTEST FOR TEACHERS

LETTERS are coming in each day in the prize letter contest on "How I Use HYGEIA *in My Class Work." Grade, high school and college teachers are eligible to compete. Letters are limited to 1,500 words.*

The contest ends July 20, 1925, and the prize winning letters will appear in the September and October issues.

First prize	*$50.00*
Second prize	*25.00*
Third prize	*15.00*
Fourth prize	*10.00*

Five letters will be given honorable mention. The author of each letter so recognized will receive a year's free subscription to HYGEIA.

Fresh Fruits in the Diet

LULU GRAVES

THE housewife has not until recent years recognized the value of fruit in the diet and she does not yet always estimate it at its true worth. This is probably because of its comparative low nutritive value.

Citrus fruits have been given a prominent place in family dietaries for some time, and other fruits are now gradually assuming their rightful place. They are no longer considered a luxury.

Fortunately, fruit of some kind is now to be had in the market at all seasons and in all sections of the country. If fresh fruit is not obtainable there are available good grades of canned or dried fruits, besides jams, jellies and marmalades.

Methods of storing and transporting fruits have been so perfected that almost all of them are available in the fresh state in city markets during the entire year; apples, bananas, citrus fruits and usually a few others are always available in rural markets. It is not necessary and not always desirable to use fruit out of season, even if one disregards the price; frequently the flavor of these fruits is not well developed and they are not as palatable as the fruits that are in season. The carbohydrate may not have been as completely changed as it should be in a well ripened product.

Why Fruit Is Valuable Part of Diet

The value of fruit in the diet is by no means confined to the nutrients present. The part it plays as an aid to digestion is important and its esthetic value is not to be ignored.

The chief nutrients in fruits are carbohydrates. Although a small proportion of protein and fat is found in some fruits, these substances are with few exceptions not in sufficient quantities to consider in the average normal diet. One notable exception is the avocado, or alligator pear, which may have 10 to 20 per cent. of fat. The carbohydrate in fruits is principally in the form of sugar with lesser amounts of cellulose and pectin bodies. This varies in different fruits and in accordance with the degree of ripeness, the lowest percentage of sugar being found in fresh fruits and the highest in preserved and dried fruits.

Cellulose in the fiber, skins and seeds of fruit also varies in different fruits and decreases somewhat as the fruit ripens; the amount of cellulose is also decreased by cultivation. It has practically no nutritive value, but it furnishes bulk in the diet. Pectin bodies likewise have practically no food value and these diminish to an even greater extent during the ripening process, as every housewife has learned in her experience with jelly making.

Approximately 80 to 90 per cent. of fruit is water. For this reason it is classed as a food having low nutritive value. This is not a total loss from the standpoint of food value, since we are known as a people that drinks too little water. For large numbers of persons the fruit they eat helps make up the deficit. Water is necessary to the body and, as it is constantly being eliminated by the skin, lungs and kidneys, it must be replaced.

May Serve Fruit at Every Meal

As an aid to digestion, fruit provides organic acids, which may help in the secretion of the digestive juices; essential food factors or vitamins; laxative sugars; bulk, which stimulates peristalsis, and water, which aids in carrying the food material produced by digestion to the cell and in the removal of waste products.

The esthetic value of fruit is in its attractive appearance and its pleasing aroma and flavor. The latter are due partially to minute quantities of ethereal bodies having no nutritive value, but giving to the several fruits a distinctive flavor and odor that are stimulating to the appetite and an aid to digestion.

Nearly all fruits combine well with some other food materials: with cereals for breakfast; with cream, custards, frozen mixtures or in combination for dessert; with nuts, celery, lettuce or other salad ingredients for either

Benjamin Shawcross

luncheon or dinner, not to mention sandwiches or sweets and the numerous jellies, jams and marmalades. This makes it possible to have fruit in some form an established part of the dietary.

Because fresh fruit is appetizing and refreshing, it is sometimes eaten injudiciously—underripe, overripe, or in too large quantities. Unripe fruit often causes intestinal irritation, probably owing either to the large percentage of cellulose that is not well masticated or to the excess of acid. These difficulties may be overcome by cooking green fruit. Overripe fruit has a tendency to ferment in the intestine; it may often be injurious because it is partially decayed.

Fruits should be thoroughly washed before using, even if bought in packages. Unfortunately this precaution is often neglected. Whether fruit is packed under the trees in an orchard, or in a clean sanitary packing house, it cannot possibly be free from dust and other possible contamination. It has probably been handled by many persons or has been left standing in a railroad yard or on wharves. Then, too, after it has reached the retail market, fruit in boxes or in crates is exposed to the usual handling and garments of many kinds brush over it. Dried fruits require very thorough washing, especially those with sugar coating, or those which are soft and sticky, such as raisins, dates and figs.

Early summer fruits like berries, which mash easily, may be washed by putting them in a colander or coarse sieve and dipping them in a pan full of water, or holding them under a faucet and letting water flow over them with little force. This washing process should be finished quickly and the berries not allowed to stand in water.

Ways of Using Berries

They should be washed before hulling or stemming them, so as to retain as much juice as possible. The juice is the most valuable part of the berries; it is a solution of sugars, pectin, mineral salts, acids and flavoring ethers.

The cultivated berry is generally an improvement over the wild, although sometimes in cultivation flavor is sacrificed to size. Well ripened, juicy berries are sufficient unto themselves as a wholesome, refreshing dish to serve. Their food value is increased by the addition of cream, but such addition is usually unnecessary and it prevents one from getting the natural fruit flavor.

If the supply of berries is limited, or if time for preparation is at a premium, they may be combined with other food materials, in a palatable way; crushed and mixed with beaten egg white to make a snow, or baked in a souffle, or with whipped cream in a mousse or parfait. With gelatin, numerous berry dishes may be prepared. Combined with less perishable fruits, such as apples, pineapples or bananas, more nutritive value is given and labor is lessened.

Because the season for berries is so short and the crop is apt to be abundant, many ways of preserving them have been devised. Jams, jellies, marmalades are too familiar to need discussion, but a choice secret in preserving is the combination of flavors.

Some of the fruits that blend well in marmalades and preserves are red currants and red raspberries, white currants and gooseberries, black currants and apples, rhubarb and currants, rhubarb, oranges and nuts, pineapple and strawberries, gooseberries and raisins and either oranges or nuts, black raspberries and rhubarb, canteloupe preserves flavored with rose extract or petals.

Blackberry juice with sugar and spices has dietetic value as well as being a delicious beverage. It is used in cases of dysentery and so-called summer complaint.

The blueberry or huckleberry is of a family variously and contradictorily named in the market. It is hardy enough to stand transportation and storage better than the berries previously mentioned, but it is used chiefly as sauce or for pies. This berry has not been cultivated to the extent that the others have. Not being so popular, the wild fruit meets the demand, but it is quite worthy of more attention, both in the cultivation and on the menu.

Cherries Are Great Help in Menu

Among other fruits on the market in the early summer are cherries and cantaloupes. Sour red cherries, when cooked, afford a pleasing variety either for dessert or for a breakfast fruit, as other fruits in season at that time are generally of the sweet variety. The juice of these cooked cherries may be used to flavor jellies, custards or ices and other frozen desserts. Drinks made of fruit juice may well be substituted in some instances for the invariable orange or lemon drinks; cherry juice is delicious used in this way.

The maraschino cherry is an ever present help in the menu solely because of the attractiveness it adds to the service. It is prepared by bleaching the fruit in a solution of salt and sulphuric acid. This is usually done in France. After reaching this country it is washed, saturated with sugar or glucose solution, colored, and flavored with oil of bitter almonds or occasionally other flavors. The cherries are then bottled and sterilized. "Maraschino juice" may be used for flavoring desserts or fruit drinks.

The ever popular melon, like other early fruits, has a high percentage of water and little nutritive value. Cantaloupes have about 90 per cent. of water and 8 per cent. of carbohydrate, and watermelon has as high as 92 per cent. of water and only 6 or 7 per cent. of carbohydrate.

Casabas, cantaloupes and similar forms of melons are deservedly popular. They are appetizing and refreshing, and their water content is an advantage in the diet for most of us. In summer we do not need a menu so high in caloric value as is required in colder weather, so these fruits give us an acceptable variation during the short time they are in season.

Apples of Great Dietetic Value

No other fruits can be used in as great a variety of ways as apples. They are pleasing either raw or cooked; they may be stewed, baked or fried to equally good effect from the standpoint of palatability. Apples combine well with other fruits and with many other food materials, because of their bland flavor. They are equally good for making jelly and jam, whether used alone or in combination with other fruits.

In order to get the best results different varieties of apples should be used for different purposes. Good dessert (eating) apples are not necessarily good for cooking. Apples belonging to the same pomological group tend to have similar cooking qualities and fruit in its prime or a little overripe is apparently best for sauce.

The flavor depends on the right blending of the organic acids and the fruit ethers with the sugars and pectin. The chief nutrient is sugar and the principal acids are malic and tartaric. The same thing is true of practically all fruits.

The acids most commonly present are malic, citric and tartaric, though several others may be present. Citric and tartaric acids are used commercially for many purposes. Citric is found most abundantly in lemons, oranges, grapefruit, limes and unripe gooseberries; tartaric is the characteristic acid of grapes and is used commercially as the basis of "cream of tartar"; malic acid is found in apples, pears, pineapples, cherries, currants, grapes and berries. The flavor does not always indicate the amount of acid present as in some fruits the sugar present masks the acid flavor.

Apples are regarded as of great dietetic value. They have all the qualities attributed to fruits and a few individual ones in addition. They have laxative properties and contain small amounts of each of the three vitamins A, B, C.

Baked apples may be served in such a variety of ways that they may be used daily on the menu, especially for children, and not become monotonous. Their attractiveness may be increased by a spoonful of jelly dropped into the cavity made by removing the core, or a few dates, raisins or nuts may be stuffed in this cavity before baking. A marshmallow dropped into the apple just before it is removed from the oven will puff up and brown beautifully, but these are not desirable unless served soon after baking as the marshmallow becomes tough when cold; so they are better for some meal other than breakfast. Cream and sugar add to the nutritive value, though in reality they are not needed for the average person. Oatmeal or cornflakes served with baked apple make a delicious combination.

For luncheon and dinner the ways for serving apples are numerous. Almost every one is fond of apple sauce either plain or in any of its fancy dresses. Apple snow, made of egg white beaten until light and folded into the sauce, may be served with cream, plain or whipped, with a soft custard, with jelly or with a fruit juice. Porcupine apples are made by coring and paring the apple, dropping it into a syrup to cook until clear, removing it from the syrup, sticking several blanched almonds into it, and then boiling syrup until it will jelly when poured into a dessert dish with the apple. This is pleasing to look at, as well as to eat; color may be added, if desired, by dropping a little fruit juice, a small piece of red stick candy, or a wintergreen lozenge into the syrup while cooking, or by serving a cube of jelly on top of the apple. Here, too, whipped cream may be used if one wishes.

Salads offer an opportunity to use apples in many ways. The well known cold slaw may be trimmed up by adding tart apple cut in small pieces. One may core and slice the apples crosswise; if they are a pretty color they need not be pared; then dip them in lemon juice to prevent discoloring, serve on lettuce with a ball of cream cheese in the center, or with the cheese put through a ricer and piled lightly on the slice of apple; garnish with mayonnaise or cooked dressing. This makes an acceptable change from pineapple and cheese, which is frequently served in this way.

Red apples add much to the appearance of a salad if used without paring. The cook simply scoops out the center, mixes it with raisins, dates, nuts, celery or any combination of these or with any fruit one cares to use in the combination, and fills the apple shell with the mixture to make a most attractive salad. Or the scooped apple may be used for sauce and the shell filled with chicken salad mixture or any other mixture which blends with the apple. Even the everyday Waldorf salad is prettier if made of red apples with the skins left on.

Jelly, pickles, preserves and butter all may be made of apples alone, or delicious butters may be made of apple and plum, apple and peach, apple and tomato. The tomato gives a pretty color as well as fine flavor in this combination. Preserves of pear and apple or of apples flavored with preserved ginger are easy to make, not expensive, and very good.

Pears, Peaches and Apricots

Pears and apples belong to the same botanical family and do not differ greatly in chemical composition. Pears have hard insoluble granules which make them more difficult for some per-

sons to digest. On the other hand, the flesh is soft and skin not so tough, so that in some instances they are less difficult to digest.

Pears are not adapted to so many uses as apples, and are not to be obtained in all parts of the country in all seasons of the year, but during the time they are in season, they may well be given a prominent place on the menu. Stewed or baked, they make a good breakfast fruit or a dessert for the other meals. A firm ripe pear baked with brown sugar and a bit of preserved ginger has a delicious flavor.

The season for apricots and peaches is short and they are perishable when fully ripe, but they are of such luscious flavor and texture as to be in great favor. They are among the most valuable of orchard fruits for canning and drying. Peaches are popular for preserving and pickling.

Because they are usually well liked they need very little in the way of preparation or combination, although peaches, in particular, blend well with many other fruits in salads and desserts, either canned or fresh.

As peaches ripen, the reducing sugars decrease in quantity and sucrose increases in quantity; the amount of acid also decreases. They have only about half as much sugar as apples, pears and apricots. For this reason they have been used more freely in diabetic diets. Though the flavor of canned peaches and apricots is decidedly different from that of the fresh fruit, it is in nowise any less desirable and has the advantage of being available throughout the year. Salads, puddings and ice creams may be made of the fruit and the juice utilized in gelatins, fruit drinks or ices.

Apples, apricots and peaches all may well be used with tapioca cream and custard, thereby adding zest to these desserts when it is necessary to use them in the winter or if it is necessary to make some appeal to the appetite of children who need them. Pineapple, too, is particularly good in tapioca. Apricot and peach seeds are used in making almond paste and almond oil.

Urges Wider Use of Alligator Pear

Alligator pears are gradually coming into more common use, and they are a fruit that should be better known. They are available throughout the year. In the spring and summer months they come from Cuba and Florida, in the fall from Jamaica and in the winter from South America.

The skin is tough and leathery and may vary in color from a yellowish green in summer to bright green and different shades of brown and purple. The alligator pear is best for eating when the flesh will yield gently to slight pressure from the fingers. At this stage, the skin comes off easily and the flesh is of a bright greenish yellow color. In the countries where they are grown they are used in many ways, but in this country they are used chiefly for salads. They have a high percentage of fat, ranging from 10 to 20 per cent., and for this reason may well take a prominent place in the diet of persons suffering from tuberculosis, diabetes or underweight.

Because they are so rich and have a bland flavor, it is well to mix them with other fruits. They combine well with the crisp green things used for salads, such as lettuce, endive, chicory, or with foods with a pronounced flavor, such as grapefruit, cucumber or tomato.

The following are some of the ways in which alligator pear may be served:

In soup:

Sliced or mashed and added to a vegetable soup.

In cocktail:

(1) Diced, served with tomato catsup and lemon juice.

(2) Equal parts of diced pear, grapefruit and kumquats.

In salad:

(1) Chill thoroughly, serve on bed of lettuce or other salad green with highly seasoned French dressing. If a half is not wished, it may be diced or cut in long thin pieces. Cubes of grapefruit or cucumber may be mixed with the pear.

(2) Sliced pear, sliced cucumber and tomato arranged on lettuce, a few strips of pepper laid on top, French dressing added.

In aspic:

Equal parts of water and mashed pear, seasoned with lemon juice, salt and cayenne pepper and molded with gelatin. Serve with mayonnaise.

In dessert:

Cubed and served with sugar and cream.

Pineapple Is a Favorite Fruit

In a list of fruits most valuable in the family dietary, the pineapple would follow very closely the apple and citric fruits. Fortunately, its aroma and flavor make it a favorite, and one does not feel that it must be eaten merely because it is good for one.

Here again the fresh fruit differs from the canned in taste and appearance with no detriment to either, though the fresh fruit contains an enzyme which acts upon the protein of the pineapple and aids in its digestion. This is evidently destroyed in the process of canning. For this reason pineapple must be cooked or canned if it is to be used with gelatin. Pineapple may be had in cans in a shredded or crushed form, which is helpful in making sherbets, puddings or sauces when time must be saved.

In Central America and in the islands where pineapples are grown, the natives eat them from their hands much as we do apples. They are much more juicy than the ones we get and an unskilled visitor does not do this gracefully. In these countries pineapple juice may be bought by the glass as orange juice is here. Very

delicious and refreshing drinks are made from it. It blends exceedingly well with other fruit juices in making punch, ices or fruit drinks.

We are apt to waste a great deal in the preparation of fresh pineapple. This may be avoided, by cutting a slice about three quarters of an inch thick, taking out the core, then cutting the fruit in wedged shaped pieces, allowing the "eye" of the pineapple to be the wider edge of the piece. One may then place these wedge shaped pieces on a salad plate with the points toward the center, putting a little mound of confectioner's sugar in the center. The fruit can be held by the rind, dipped in the sugar and eaten from the fingers. Often this is a much easier way of eating the fruit from a tray than to use a spoon, and it makes a serving that is different.

The following recipes are of some salads containing fruit which may also serve as desserts:

Pineapple Salad (six servings).—Take one can of pineapple with juice strained off and half pound of marshmallows cut in small pieces. In the salad bowl, place first a layer of pineapple, then a layer of marshmallows and allow it to stand for a time in order to blend the flavor thoroughly. When serving, add a spoonful of whipped cream to each helping.

Peach Salad.—Place half a peach on lettuce, fill the cavity with a mixture of small pieces of pear, walnut meats, and chopped celery. Serve with whipped cream dressing and garnish with parsley.

Fruit Salad.—Equal parts of sliced peaches, shredded pineapple and white grapes, which have been cut in half and seeds removed. Use a whipped cream dressing.

Lighting the Home

DON'T you like to walk along the street in the evening and steal glances in the windows of a real home—father stretched at ease in the big chair reading the evening news, mother near the table with a bit of sewing, sister at the piano and small brothers with heads together over some new game?

Such a sight never fails to stir the homeless street wanderer and many of you have been known to feel actually resentful at those persons who pull down the window shades as the lights go on and enjoy their home life in a privacy that seems to you selfish.

Lighting the Living Room

Have you noticed the number of reading lamps, floor lamps, bridge lamps and lamps of all descriptions that can be noted in the coziest looking of these homes? In large living rooms on fashionable streets there seems to be no limit to the number of lamps that decorate and beautify the rooms.

This is as it should be if the family's eyesight is to be properly protected, says the Eye Sight Conservation Council of America. The modern living room is a place of many recreational activities; there should be a lamp on the library table, a floor lamp for the piano, another near an easy chair and a fourth at the davenport.

In buying a portable lamp, says the council, you should examine the lighting effect by sitting down by it and noting the spread of light and the shading of the light sources. One of the primary faults of portable lamps is that usually not enough light escapes upward. Open topped portable lamps are much to be desired.

Use of portable lamps does not mean that ceiling fixtures should not be installed so that they may be used when desired, or that wall brackets should not be supplied. However, the wall brackets in living rooms should be considered largely from a decorative standpoint and should contain small lamps which are well shaded.

In the dining room the table is the important area and it should be dominantly illuminated. This can be done very satisfactorily with the large pendent shade, which is commonly called a dome, or with the shower fixture that contains several shades. Candles well shaded are useful and ornamental on the buffet and elsewhere.

Most kitchens today have a drop cord from the ceiling or a combination fixture from the center of the ceiling. The best lighting unit for the kitchen is one with an enclosing, diffusing glass, fastened close to the ceiling. This provides general lighting for the kitchen, but in order to avoid the necessity of working in shadows, a wall-bracket equipped with a diffusing glass shade may be placed over the sink.

Mirrors Need Bedroom Light

In the bedroom, general illumination is not as important as the lighting at the mirrored furniture. The best lighting is obtained by means of shaded wall brackets on both sides of all mirrors. Portable lamps may be used for this purpose, provided they are obtained of proper height and design. Brackets may be fastened to the mirrors, which makes it possible to alter the position of the various pieces of furniture as desired. A portable lamp at the bedside is useful for reading and for emergency lighting during the night. A decorative fixture may be installed in the center of the ceiling for general illumination on entering the room.

In the bathroom the mirror is the primary consideration and the best lighting is to have a wall bracket with a dense shade on both sides of the mirror at a height of about 66 inches. In small bathrooms a ceiling fixture is not necessary, although sometimes the householder desires it.

The Snake Gardens of Brazil

HOWARD WAKEFIELD

IT WAS during a 12,000 mile voyage made in the first half of the year 1919, in which I visited the principal ports of the east coast of South America, that I discovered a snake garden. This queer type of garden was under the direction of probably the most famous scientist on the South American continent.

We had just crossed the "line" and were convalescing from the ancient torture which every sailor who crosses the equator for the first time must endure. Our next port of call was Santos, Brazil, a place which is noted for two things—coffee and yellow fever. Over one third of the world's supply of coffee floats out from this harbor, which at one time was a hotbed for yellow fever. Many a ship's company has sailed into this port only to have all her men die from the disease, but such an occurrence is a thing of the past, and is only related by sailors as a part of the maritime history of Santos.

Santos is surrounded by low mountains on which the tropical vegetation is very dense. It was a beautiful morning when we left the coffee port on the thoroughly modern railway which was to take us across the mountains to the plateau lands on which lay the city of Sao Paulo, "the Chicago of Brazil." Sao Paulo is a city of extremes, rich and poor, palaces and hovels, but a most attractive city for the newcomer to explore.

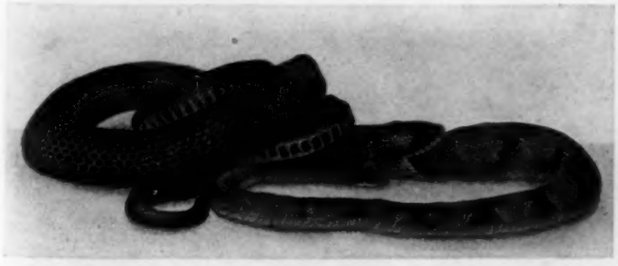
Among my adventures in this country so full of surprises, nothing was more interesting than the snake gardens on the outskirts of Sao Paulo. Here in this land which is little known to most of us in the United States is one of the most specialized institutes for scientific research in the world.

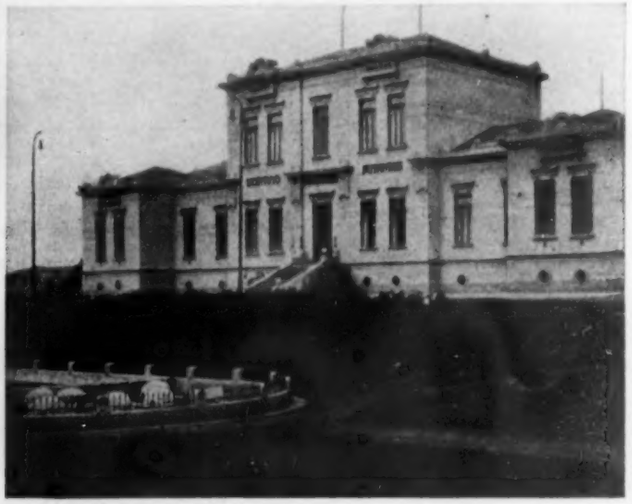
Immunity to snake bites is the singular problem of the Butantan Institute which was founded by Dr. Vidal Brazil, the present director.

In Brazil Are 23 Venomous Snake Species

Snakes—poisonous snakes—are a big problem in all parts of South America and hardly a day passes in the agricultural districts without a casualty from a snake bite. At present about 254 different species of snakes have been described for South America, and of these forty-two are poisonous. Brazil alone has 155 species and of these twenty-three are poisonous, so that it is only natural that Brazil should lead the way in an attempt to eradicate the toxic snake.

The Butantan Institute is supported by the government of the republic of Brazil. The institute itself, as shown in one of the photographs, is a well equipped, two story building which houses the laboratories, museum, library and offices. Dr. Brazil has surrounded himself by an able corps of twelve native assistants, the majority having been graduated by medical schools of the United States. The laboratories are equipped completely with the highest type of European apparatus, while in the general library the best known medical publications and





Two enemies of poisonous reptiles in Brazil are the mussurana, the cannibal snake pictured above, and the Butantan Institute, at the right, at which are made antitoxins for snake bites.

The mussurana is a steel gray, six foot fellow that is harmless to man but fond of eating his poisonous brothers.

periodicals of the world are to be found. In the museum on display are wax models in life size proportions and in colors, illustrating the lesions which the poisonous snakes inflict on their human prey.

In the beautiful gardens surrounding the institute, the venomous snakes are raised and cared for, just as the farmer of our own country feeds and fattens his cattle for the live stock market.

The different species are housed in arenas surrounded by cement walls about two feet high. Scattered about inside are the snake houses, which bear a resemblance to the muskrat house. The snake house is made of cement with numerous openings for entrance and exit.

How Attendants Handle the Snakes

It was a novel experience to see an attendant enter one of these snake arenas with no more protection than a laboratory gown, a stick about three feet long with a "U" hook on one end—the batoon—and his legs covered with leather puttees reaching to his knees. In such an attire an individual is completely protected, for Dr. Brazil told me that a rattlesnake, for instance, cannot strike higher than the knee.

The attendant approaches the snake from the rear and quickly slips his batoon under the snake's belly and lifts the viper from the ground; with a still quicker movement he seizes the head of the snake very firmly and inserts a strip of wood crosswise into its mouth as a gag to prevent closure of the jaws. Another attendant approaches from the front, calmly holding a pair of forceps in one hand and a small dish in the other; he squeezes the glands inside the mouth containing venom, at the same time holding his dish just under the lower jaw so as to catch the colorless vonom as it runs out.

Just as diphtheria antitoxin is prepared by injecting horses, so is the snake antitoxin prepared by injecting horses with the various types of venoms. In general there are three big groups of venomous reptiles—the rattlesnake or crotalus, the coral snake or elaps, and the pit viper or lachesis.

Dr. Brazil injects, for example, the venom from a rattlesnake in small doses into a horse; from this horse he obtains an antitoxin that is specific for the rattlesnake's bite. Other antitoxins are similarly prepared so that by injecting the proper antitoxin he can in most cases save the life of an individual bitten by a snake belonging to any of these three groups.

In those cases in which the type of snake that inflicted the bite is unknown, the scientist has prepared a comprehensive or general antitoxin made by injecting horses with doses of venoms from all three types of poisonous snakes.

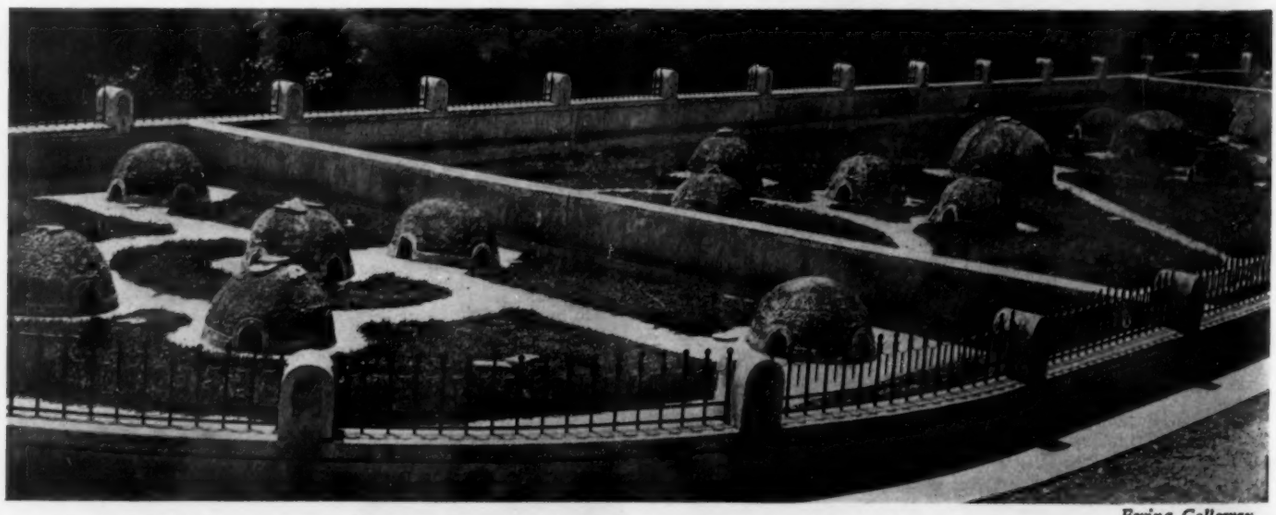
A Natural Enemy to Poisonous Snakes

Dr. Brazil has been conducting an educational campaign among the natives in an endeavor to get them to wear proper protection for their legs and feet, such as heavy leather shoes and leggings. At the same time he has been attempting to get the plantation workers familiar with the mussurana, a type of snake which is harmless to man but vicious to its poisonous brethren.

This snake is about six feet long, steel gray in color and rather fat. It looks like anything but a pet, yet on the morning of our visit, Dr. Brazil calmly held one of his numerous mussuranas in his arms and stroked it in about the same manner as our grandmother caressed the cat.

The mussurana can attack a snake of its own size and usually is the victor; it requires several hours to swallow its victim and a week or longer may pass before digestion is complete. The picture on the preceding page very well illustrates an attack.

While nature has provided some protection against the venomous reptile in the mussurana, yet through the careful investigations of Dr. Brazil and his co-workers, we now have the specific antitoxin for poisonous snake bite.



Ewing Galloway

The snake houses are made of cement and the entire snake village is enclosed by a cement wall only two feet high. Attendants wear leather puttees as their sole protection against the reptiles.

The Baby's Eyes

EDWARD JACKSON

"ARE THE baby's eyes all right?" That is apt to be the new mother's first question about them. Or it may be the first question of the visitor, who having never before looked closely at a baby's eyes sees that they are different from those of older persons.

It would be a safe guess to answer yes, for serious, noticeable and permanent defects at this time are very rare. Even defects that are clearly hereditary may not develop for years afterward, and some faults apparent at birth entirely disappear as the baby develops.

The color of the eyes at birth is much the same in all babies, a deep gray-blue of the iris. It is not the "baby blue" applied to clothes, and it differs from the blue or gray eyes seen in older children and grown people. In the first few months the color of the baby's iris gradually changes to the color it will have in later life. The pupils of the baby's eyes are small, so it is easy to see the color of the iris, which is spread out behind the clear cornea.

The eyeball at birth is very large compared with the size of the body, and it grows so that at three years old the clear front of the eye, the cornea, is about as large as it ever will be, although the back of the eye continues to grow. In childhood, the eye keeps pace in growth with the brain rather than with the growth of the body as a whole. But the brain continues to enlarge slowly for many years, while in the eye only the crystalline lens grows.

Should Be Protected from Sun

The relatively large size of the baby's eye is masked by the smallness of the opening between the lids so that, in spite of their real size, the eyes are not a prominent feature in the very young baby. The bones around the eye are quite undeveloped in the infant, and the eyes are at the surface of the face and rather unprotected from accidents; nor is the light shut off by eyebrows or eyelashes. On this latter account there is real need to protect the baby's eyes from the sun by a shade when the child is lying with its face upward; or to keep his face turned from the sun. Even when the eyes are closed, a great deal of light reaches them through the lids so that the whole body may squirm to escape it.

The baby closes his eyelids very promptly or turns away from anything that threatens to touch or get into his eye. In Eastern countries, if the child keeps his eyes open when flies approach they may even light on his eyeball; the insensitiveness of the eyeballs to touch has much to do with the spread of contagious inflammations of the eye in young children.

Large as are the eyes at birth, they are not yet fully developed. The lacrimal glands that are to supply the tears do not ordinarily begin to function for several weeks. Other little glands keep the eye moist for the time, but, although the baby screws up its face and cries to secure attention to its needs, there is no flow of tears.

Sometimes the tear passages, which drain away the tears into the nose, have not opened at birth. What secretion there is accumulates in the little tear sac at the side of the nose close to the inner corner of the eye. As it is kept there, germs multiply in this secretion and a purulent discharge is formed that may be pressed out into the eye. If this discharge is pressed out several times a day, and washed away from the eye, the passage usually opens up and the discharge ceases, without the very serious consequences that follow obstruction of the tear passages in older persons. But it is a matter important enough to call to the attention of the physician.

The delicate tissues of the eye, coming in contact for the first time with wind, dust and germs, have to establish their defenses against the new dangers. This process is often carried on with redness of the eyes and discharge from them that may vary from what is scarcely perceptible to symptoms of violent inflammation. In many cases "babies' sore eyes" are not really dangerous. But sometimes they entail life-long blindness. The only safety lies in having them promptly and skilfully treated.

Cutting Down Infant Blindness

A generation ago, ophthalmia neonatorum (severe inflammation of the eyes of the new-born) caused more than one fifth of the cases of blindness in children. A campaign of education was started and laws were enacted requiring all cases of inflamed eyes in the new-born to be reported promptly to the health authorities. Information with regard to the dangers of such ophthalmias was widely published. As a result of this campaign, in institutions where formerly one child in five, or even one in three, was blind from this cause, recent admissions show

only one in twenty, or one in fifty, blind from ophthalmia neonatorum.

Although many germs may cause such inflammations, almost all the cases that result in blindness are due to one of the venereal disease germs, the gonococcus. The danger of this form of inflammation causing serious damage to the sight can be avoided with practical certainty by carefully placing in each eye, immediately after birth, one or two drops of a 1 per cent. solution of silver nitrate. In some cities the board of health supplies leaflets containing this information and furnishes the silver nitrate solution for the use of the nurse or doctor in attendance.

Baby Soon Masters Eye Movements

The development of eye movements that goes on after birth are very important, for these movements enable one to see quickly and accurately in all directions, to judge distances and to guide body movements by sight.

At birth the eyes can move in all directions, but they are not in full obedience to the will or in exact harmony with one another. They generally move up and down together very well, but in turning from side to side, they do not keep together perfectly so that both look always at the same object. These movements rapidly become accurate and under control. They come to respond promptly to the needs or desire of the infant after a few weeks or even after a few days.

This mastery of the eye movements is gained by the spontaneous efforts of the baby, unless there is some serious obstacle—handicap—that prevents him from using the eyes together in the normal manner. Such a handicap may be partial blindness in one eye, which keeps it from taking its proper part in vision, or lack of the proper nerve connections enabling the two eyes to cooperate. If the eyes are very far sighted, when a near object is looked at, it is only seen distinctly by a great effort to focus. This effort interferes with the use of the two eyes together and may make them turn in too much, making the child cross eyed.

The muscles of the eye may become paralyzed, especially after diphtheria, and this may be such an obstacle to normal eye movement as to cause turning in or turning out of the eyes. When a child has convulsions or spasms, the eye muscles are almost sure to be affected with violent contractions; the eyes are rolled into extreme positions and often held there for a time. Generally, the normal positions and movements are resumed after the spasms have passed off.

Young children sometimes break small blood vessels in the membrane covering the eyeball during severe straining, especially in paroxysms of whooping cough. These may bleed until the whole white of the eye may be covered by blood, which may take weeks to absorb. This condition is alarming to look at, but it does no other harm. The blood is finally absorbed, without leaving any permanent change in the appearance of the eye.

Although the baby's eyes are so large at birth and have attained almost their full size at five years, it must be remembered that they are not fully developed and cannot do the work of fully developed eyes. The keenest vision is not attained until the child is six years old or more. Small objects are not so well seen; the parts of the brain devoted to vision being incompletely developed.

Eyes of Kindergarten Child Need Rest

There is abundant reason for using large type in primers. Fine stitching, bead work and similar exercises, such as are sometimes expected of young children in kindergarten, may be quite harmful. Even when the object looked at is not small, the young child must not be expected to look at it long at a time, but should be encouraged to turn the eyes away frequently to rest them. To keep the eyes on the book, at times when they are tired, does not help the child to learn and may be positively harmful.

Because they can hold things close to their eyes and still see them, and because they need larger images of what they look at to make up for the incomplete development of the eye, young children are liable to acquire the habit of holding things too near their eyes. As they grow older this should be corrected by encouraging them to try to see things at longer distances. Many children starting to school have eyestrain, or even inflammation about the eyes, merely because they hold their books too close to their eyes.

Healthy growth and development are most important to the child. No work that he can do, or knowledge he can get, compares with them. One condition of growth is that exercise and rest be alternated; for the young child periods of exercise must be short and the exercises of great variety. Later he should learn to apply himself, to stick to one thing until it is done; but in childhood the law of growth should be supreme. To respond to the attraction of the passing moment is wholesome, and the child that ceases to do this too early is in danger. Work for the eyes that is not trying or minute must not be continuous or kept up long at a time.

Generally, a child's eyes that appear to be all right need little more than the care above indicated until he reaches the period of school life.

Traveling in the Tropics

KATE PLATT

TRAVELING in the tropics usually is accompanied by a certain amount of discomfort; nevertheless, it is a very delightful experience. Many discomforts and inconveniences may be avoided or, at any rate, alleviated by the exercise of foresight.

The following hints and suggestions concerning preparations to be made and precautions to be taken are given in the hope that they may be of service to those who are contemplating travel in tropical regions.

Good health and strength are essentials to enjoyment when traveling and neither old persons nor growing children should attempt to take a long journey under more or less arduous conditions which may prove trying even to the strong and robust. In all cases the prospective traveler should pay a visit to his doctor before deciding on an undertaking that will inevitably throw an unwonted strain on his physical powers. The object of the consultation is to make sure that there is present no bodily weakness or disability that might render the journey injurious to the health.

The traveler who is likely to obtain the greatest benefit from the adventure is one who, in addition to good health, possesses the quality of adaptability. No one who finds it difficult to adjust himself to constantly changing conditions and likes to have things just so should think of traveling in the tropics.

On the other hand, a lover of the picturesque, who delights in new experiences and is prepared to make the best of things, will derive a vast amount of both pleasure and profit from the trip; and if he should be the happy possessor of a keen sense of humor his enjoyment will be redoubled.

The natural powers of resistance to disease should be strengthened before departure by attention to the general health, which should be in the best possible condition.

Protection against smallpox and typhoid fever, prevalent in the tropics, should be acquired by vaccination.

The teeth should be put in good order. As the glare of the tropical sun is apt to develop any incipient eye trouble, the oculist should be asked to examine the eyes in order that any weakness may be detected and necessary precautions taken. If glasses are worn any needful change should be made. A pair of tinted spectacles will be found useful, to soften the strong light and to protect the eyes from dust.

The general idea is that it is extremely hot in the tropics. So it is; and the heat is of all varieties—from the moist and muggy heat of the jungle, valleys and low lying lands near the sea or banks of the great lakes and rivers, to the scorching dry heat of plains and deserts.

International

A beach scene at Mount Lavina, the Palm Beach of Ceylon. The traveler in the tropics will need many changes of white, washable clothing.

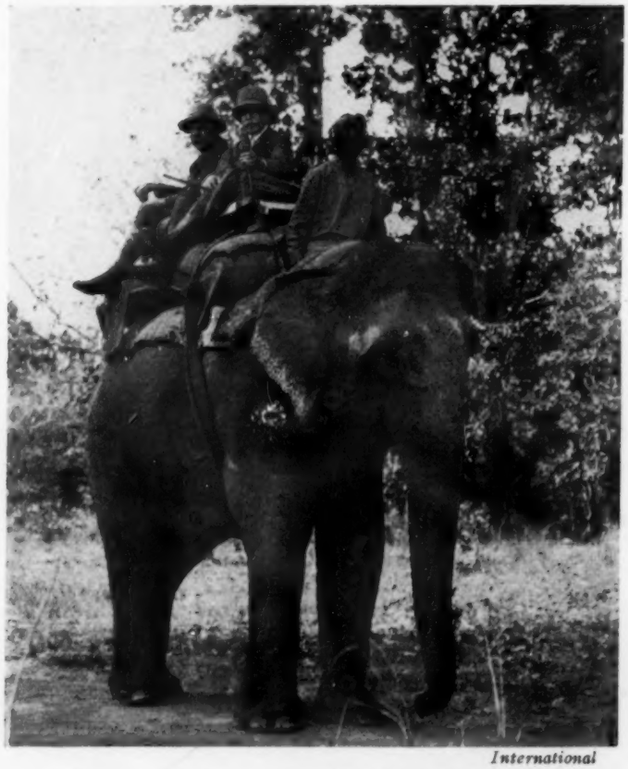
It is not always realized, however, that the temperatures may be greatly modified by such local conditions as the height above sea level, nearness to the sea, the prevailing winds, or the presence of vegetation. It is a surprise to many to find that it is possible to feel cold even on the equator.

Seasonal variations may be great. In some places throughout the hot season the heat may be intense, while in the cold season the temperature may become very low, especially during the night. In other places it may be uniformly hot throughout the year.

In traveling through vast countries like India or China or when crossing the great continents every variety of climate may be met with and sudden changes of temperature experienced.

What Clothing Is Essential

As a rule, traveling is timed to take place at a season when the climatic conditions are at their best, resembling those of the summer in a temperate climate. Even though extremes of temperature are for the most part avoided, it is often necessary to pass through regions in which some degree of discomfort is inevitable. It may be unpleasantly cold during the night, or very hot when the tropical sun is overhead. Sand or dust storms may be encountered, and they are indeed a disagreeable experience.



International

Topees, or pith covered hats, are essential in the tropics even in the cold season and should always be worn in the heat of the day. Land journeys in the tropics are taken in rickshaws or palanquins, by elephant or camel, as well as by train.

Owing to the constant changes of temperature additional clothing, which can be either put on or discarded when the occasion arises, should be available. While it is unwise to encumber oneself with an unduly large amount of baggage, the stock of clothing should be sufficient to allow the frequent changes necessary to comfort in a hot climate. It is not always possible to have clothes washed at short notice. It may happen that the washing must be done by the traveler himself if done at all. For that reason, it is an advantage while traveling to have knit silk or cotton underwear, which is easily washed and does not require ironing.

Extra warmth may be obtained by an overcoat, warm but light in weight, together with a series of sweaters of different degrees of thickness.

If the journey is undertaken during the cold season, as is generally the case, a suit of light tropical tweed is suitable for ordinary wear. While traveling through a hot region or during the heat of the day, a white drill or pongee suit may be worn. One piece dresses of uncrushable cotton or thin silk, either white or of fast dye, are very practical. These should be washable and easily ironed.

Comfortable walking shoes are necessary. White or light colored canvas or drill shoes, with white stockings, are usually worn; a stout pair of leather walking shoes is useful.

Topees or pith covered hats are essential even in the cold season, and always should be worn during the heat of the day. Those who have never lived in the tropics find it difficult to realize how very important this is and fail to appreciate the disastrous consequences that may arise from exposure of the head and neck to the direct rays of the tropical sun.

A sun umbrella is indispensable, and an ordinary rainproof coat (not rubber) and umbrella will be useful.

Baggage and Bedding Needed

The main supply of clothing should be packed in a large, but not too large, trunk to which access can be obtained periodically.

It should be remembered that when the heat is intense, packing and unpacking entail a good deal of exertion and are most exhausting. For this reason, packing should be done systematically. Garments suitable to different temperatures should be packed separately and a complete list of the contents of each box made and fixed inside the lid. A duplicate list should be kept for reference. This will prevent much aimless hunting for missing articles and wear and tear on the nerves.

A small trunk containing a supply of clothing for immediate use may be replenished from time to time.

Toilet requisites, together with a change of clothing and the small articles indispensable to

comfort on a journey, should be packed in a light suit case. This, together with a hold-all, should invariably accompany the traveler and not be sent on in advance or allowed to follow with the heavy baggage, which may or may not arrive when expected.

Only the modern hotels in the large cities provide bed linen. The traveler who stays in hotels off the beaten track or in the rest houses or places where the halt for the night is made must bring his own sheets, blankets, pillows and rugs. A wadded cotton coverlet will be found to be a useful addition, for it will serve as a mattress. The pillows, provided with a loose outer covering of colored linen or cretonne, may be used as cushions in the day time. Both pillows and coverlet will be appreciated on a railway journey or when traveling in an uncomfortable vehicle.

The bedding, together with the wrap coat, dressing gown and a rubber hot water bottle, which is an indispensable adjunct to comfort, are packed in a waterproof canvas hold-all.

Traveling by sea is usually pleasant and the heat not excessive except in such land-locked seas as the Red Sea, where very real discomfort may be experienced. Protection from the heat and glare, which may be very trying, is afforded by screens and awnings. Electric fans are provided in the cabins and a supply of ice makes the heat more endurable. Clothing appropriate to the temperature should be worn.

Long Journeys by Land

In taking long journeys on land, one or more nights are often spent in the train, and rarely does one find the conventional sleeping cars. The train consists of carriages divided into compartments which hold four or six persons, according to the class. By night the long seats are used as couches, the accommodation being supplemented by shelves above, which are closed by day and let down for the night.

During the middle of the day, the heat may be so great that it is necessary to keep the windows closed and the shutters down to exclude the glare. Electric fans usually are provided.

Each compartment has a lavatory attached, and water is available for washing. The all-pervading sand and dust make the carriage exceedingly dirty and constant washing is necessary.

Land journeys are taken not only in trains, but also by motor, in vehicles drawn by horses or bullocks, in carrying chairs or palanquins carried by coolies, in rickshaws, on horseback, or on camel or elephant. All these methods are used on occasion and have their attractions, but all are more or less tiring.

The food to be obtained in refreshment rooms and rest houses varies in quality, and caution must be observed in partaking of articles to which flies and other germ carriers are likely to have had access. Milk or water is subject to contamination by disease germs and unless sterilized by boiling is unsafe. Soda water free from suspicion can usually be obtained from the refreshment rooms, but when the journey lies outside the beaten track, an ample supply of bottled soda or natural water should accompany the traveler.

Wiele & Klein, Madras

Unless the traveler plans to stop only in the modern hotels of the larger cities, he will need some bedding of his own. If he wants a mattress to sleep on in such a stopping place as this, he must produce it from his own carry-all.

No raw fruit should be eaten unless the outer covering has been removed. It is difficult to be too emphatic about this.

Such diseases as diarrhea and dysentery are prevalent in the tropics, and only too often are acquired by travelers. The infection is most commonly derived from food or drink.

Should Carry Own Medicine Kit

Certain diseases, however, are carried by insects which convey the infection through stings and bites. Of these diseases, the most important is malaria, carried by the mosquito, with which some regions are infested. Hence the necessity for protection by taking quinin and by using mosquito nets at night.

A doctor is not always at hand and, as prompt treatment may often avert a serious illness, certain medicines for use until the doctor arrives should be carried by every traveler in the tropics.

These medicines are: A bottle of castor oil—one tablespoonful to be taken at once as soon as symptoms of diarrhea or dysentery appear; a bottle of 5 grain quinin tablets—one tablet to be taken each day as a preventive when passing through malarious regions, and three times a day if fever is present; tincture of iodin—to be used as an application for bites, stings or abrasions.

Health for the Swimmer

NO ONE can deny that swimming is among the most healthful of exercises, but swimming pools and bathing beaches are not always healthful places. Both the swimmer and the swimming pool operator must take certain precautions if the pool is to be made a safe place for swimmers.

A committee of the American Medical Association has made a study of swimming hygiene and has recently issued a number of recommendations.

Swimmers are warned to stay out of pools if they have colds, head infections or catarrh, since swimming and diving tend to force infection into the sinuses or ears, resulting in serious and sometimes fatal consequences.

In-breathing when the head is more or less submerged, diving feet first with nostrils open, blowing the nose, coughing or hawking into the tank are all forbidden under the committee's rules.

A time limit for each bather of from forty-five minutes to an hour on the use of the pool is advised so that (1) the number of bathers at any given time may be reduced, and (2) the loss of body heat due to chilling may be minimized. Sitting around in wet bathing suits is especially warned against by the committee.

The following rules for bathers should be posted in conspicuous places about all swimming pools, according to the committee's suggestion:

RULES FOR BATHERS

IN ORDER TO MAINTAIN PROPER STANDARDS AND PROTECT THE HEALTH OF PATRONS IT IS NECESSARY TO INSIST UPON OBSERVANCE OF THE FOLLOWING RULES, WHICH ARE APPROVED AND THEIR STRICT ENFORCEMENT REQUIRED BY THE

STATE BOARD OF HEALTH.

WARNING: *Persons with colds, head infections, "running nose or ears," and catarrh are warned that swimming and diving tend to force the infection into sinuses or ears and to result in serious if not fatal complications.*

1. All bathers shall use shower baths, including soap if necessary, before entering the plunge. (The plunge is not intended as a bath tub.)

Safety Limit

BATHERS MUST NOT REMAIN IN THIS TANK LONGER THAN ONE HOUR

2. Bathers who have been outside the bath house or plunge enclosure shall not reenter without passing through a foot bath and using a shower.

3. Bathers shall be forbidden to wear private bathing suits that are not properly laundered. Light colored or undyed wool is suggested.

4. Women shall wear caps while in the plunge.

5. Persons not dressed for bathing shall not be allowed on walks surrounding the plunge, and bathers shall not be allowed in the places provided for spectators.

6. No person suffering from a fever, cold, cough, or inflamed eyes shall be allowed the use of the plunge. (These disorders may be transmitted to others.)

7. No person with sores or other evidence of skin disease, or who is wearing a bandage of any kind, shall be allowed the use of the plunge. (A bandage may conceal a source of infection.)

8. Spitting in or in any other way contaminating the plunge, and spitting on floors, runway, aisles or dressing rooms shall be prohibited.

9. Public combs or brushes shall not be furnished and such articles left by bathers shall be permanently removed.

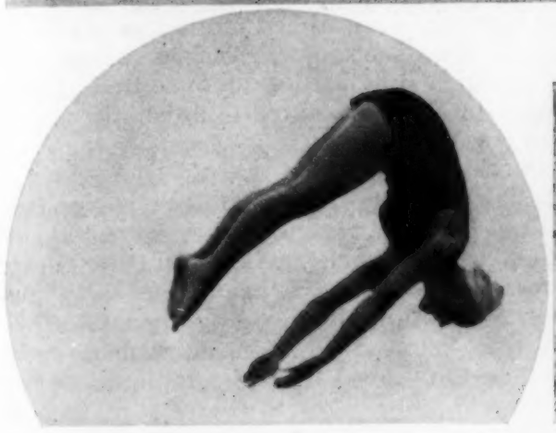
10. Eating within the plunge enclosure shall be prohibited.

11. Bringing or throwing into the plunge any objects that may in any way carry contamination, endanger safety of bathers, or produce unsightliness shall be prohibited.

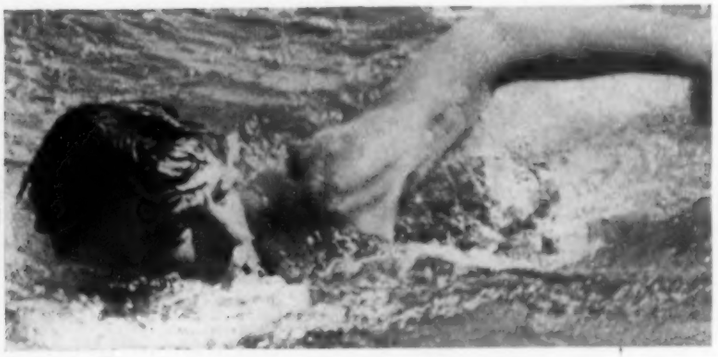
THE MAJORITY OF OUR PATRONS WILL OBSERVE THESE RULES OF THEIR OWN ACCORD AND WILL RENDER US A GREAT SERVICE BY REPORTING ANY INFRACTIONS TO THE ATTENDANTS. ANY PERSON FAILING TO COMPLY WITH THE ABOVE RULES WILL BE IMMEDIATELY EXPELLED AND DENIED THE FUTURE PRIVILEGES OF THE BATH HOUSE.

We Like Your Looks—

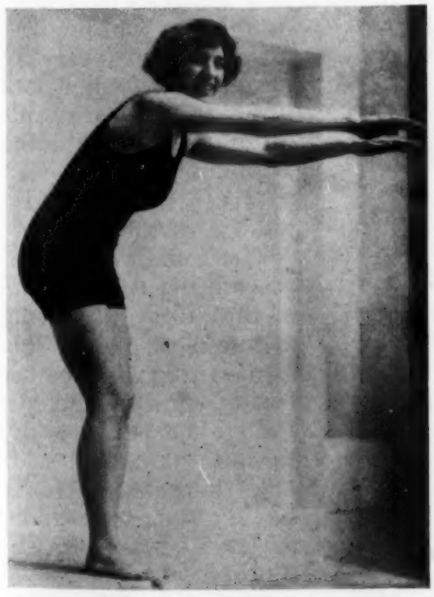
But— Don't Sit Around When You Are All Wet



AILEEN RIGGEN
Doesn't Let Her Nose and Ears Fill Up When She Dives and Swims.



JOHNNY WEISMULLER
Keeps Moving When He Starts. You Never Saw Him Loafing Around in a Wet Bathing Suit and He Doesn't Catch Cold Because He Knows How to Breathe While He Swims.



Photos by International

SYBIL BAUER
Dives Right! Breathes Out! Doesn't Sputter!

KEEP MOVING
You Will Get Chilled if You Sit Around While Wet.

Let the Whale Snort and Blow!

Humans Aren't Built That Way!

Why Children Are Cross

EDITH LOCHRIDGE REID

NO CHILD is ever irritable if he is comfortable; so for this lapse in good conduct parents should hesitate to scold or punish. When a normally healthy child sulks or cries or, in the parental vernacular, "acts cross," there's a reason; in the case of young children it is usually a physical one.

So rather than expend useless energy in worrying about the child's condition or nagging him about his conduct with petulant commands, a better course is to consider as calmly as possible the cause of his peevishness.

"It's the limit the way my youngsters have acted today," exclaimed a nerve-frazzled mother to her neighbor; "they have nearly driven me wild."

The day had been unusually hot; one of those prematurely warm intervals of early spring when the air envelops one like a warm wet blanket.

"Mine, too, started quarreling this morning," replied the Wiser Mother, looking not at all perturbed or wrinkled of countenance, "but I just dropped everything and decided to find out why they were making such a fuss—"

"Did you find the reason?" interrupted the One-Who-Hadn't-Found-Out.

"Indeed, I did. They were dressed too warmly for this kind of a day—winter underwear, of course, for they hadn't yet changed. The friction of this warm clothing on their skins, together with the fact that their bodies must make this sudden adjustment to higher temperature, had reacted to disturb their peace of mind—and mine, too," she finished jokingly.

"Of course," agreed the first mother, "but you couldn't change the weather for the sake of your children's dispositions."

"No. Just change of clothing and certain home conditions proved sufficient," replied the Wiser Mother. "I brought them in out of the hot sun, read them a story while they cooled off a bit, put them in a tepid bath to soothe the prickly rash, and gave them cool bread and milk for their lunch. Then I dressed them in fresh, light clothing and they played in their shady back yard all afternoon in a perfectly amiable manner."

The nervous, discouraged mother meditated a moment. Then she spoke: "Mercy, though, you spent so much time getting them settled. I was too busy for that. I wanted to finish my work."

"Did you finish?"

"I should say not."

"Well I did," the Wiser Mother responded; "the time I had to use while they were happily engaged easily made up for all the effort; otherwise I would have been constantly disturbed and continually scolding all day."

But this Wiser Mother accomplished much more than time saved for the completion of her daily work. She showed herself master of circumstances and she had the gratifying consciousness that she had removed discomfort and made her children happy, when otherwise her day might have proved a hectic memory to all concerned instead of one ending in peaceful contentment.

Besides the unfavorable results from having children too heavily or too lightly clothed or not otherwise properly prepared for weather conditions, there are many other points of clothing adjustment that merit the careful thought and attention of mothers.

The insidious phase of discomfort from clothing is that the child usually is unaware of any localized pain or any keen suffering, and hence, even though he is old enough to talk, does not recognize the cause of his annoyance clearly enough to report it to his mother.

For a month every time Mary went downtown she grew irritable and on returning home al-

ways complained of a headache. As she had never before engaged in any such conduct and as it was of recent development apparently, her mother puzzled over the matter seriously and mentioned it to a nurse who lived next door. Investigation revealed that this trouble had arisen only since Mary had begun wearing a certain hat from last season. The crown was just a trifle tighter because her head had grown slightly in a year, and this had not only caused the hat to fit too closely around the rim, but it also pushed the barrette on her hair against a sensitive nerve. When this hat was discarded Mary was her own sweet self again on shopping or pleasure trips.

A rubber band to hold bobbed hair in place often is a half insensible source of annoyance, as is the brass pin that holds the hairbow. Hair braided too tightly next to the head frequently disturbs the naturally placid child. Often the rubber band under the chin to hold the hat in place is so narrow that it cuts into the flesh or so tight that it interferes with free movements of the head.

Improper care of the hair and the scalp is a frequent source of peevishness in a child. Any adult realizes how uncomfortable dandruff or scales can become if permitted to go uncleansed or unremoved. Displays of temper and fretfulness are often accompanied by clutching and scratching of the head, especially in very young children, and such actions should not be disregarded until a full examination has been made as to the hair hygiene.

The superficial care of the head and the hair has a very important place in making children comfortable and keeping them good natured, to say nothing of providing permanent health benefits. I have no desire to dictate hair modes, but the truth is that short hair with no frills, bows, combs or barrettes is the sensible and the only proper method of dressing a child's hair. Any other method is simply a sacrifice of beauty for style or whim.

Improper Clothes Affect Schoolwork

A teacher of grade school pupils made a special study of the clothing her pupils wore in its relation to their schoolwork and its reactions on their conduct.

From her broad experience and psychological investigation she discovered many evils arising from minor ill adjustments of the child's clothing.

One boy who had been a very good student gradually began to lapse in his work at the beginning of a new term. After spending some time inquiring into his food and sleep habits, the teacher finally found that he was wearing ill-fitting shoes. A relative had bought him an expensive pair of shoes at a sale. These were "loose enough" for George, as his mother explained to the teacher with great emphasis and with surprise at his teacher's interference, yet they were found to be not at all suited to his foot. His nerves were disturbed by this subtle discomfort, particularly after his coming in from any exercises on the playground.

Quite frequently children wear shoes "handed down" from an older brother or sister; such a practice is much to be deplored and probably many ills and fits of temper can be definitely traced to a shoe a trifle too short or too narrow, one with too high a heel or so loose that it rubs blisters on the foot.

Proper hosiery is another important phase of foot hygiene. A stocking or sock that is too long will make a wrinkle some place, or one that is too short will press on the toes or draw the foot up ever so slightly. Whether in babies or older children this condition should be particularly avoided.

Extra tight rubber bands in legs and waists of bloomers and around the top of half socks are sources of irritability and inefficiency. When garters are suspended from the shoulder strap often there is a rawness caused by this pulling and rubbing.

Sometimes a broken or lumpy button presses against the leg or back, and occasionally the trouble is found to be the buckle of a garter or suspender that annoys enough to cause twitching and restlessness. Neckbands often are too tight from the viewpoint of health without being tight enough to give a choking feeling. A school child stooping over a desk feels a pull on the neck of clothing and there should be ample circumference to allow for this posture, or headache may result.

Clothing Corrections for Younger Children

The clothing of little children should not be starched. If the garments are starched some harshness of stiff seams or edges will be manifest in neck or armholes and cause either itching or skin abrasion.

One should be sure that the armholes are amply large. For the new baby's clothing a mother should at least be able to thrust her own fist through this opening.

After gingham bloomers or rompers are washed, mothers should note carefully whether they have shrunk enough to be uncomfortable in the seat. A baby just old enough to sit on the floor and crawl around may be perfectly miserable from such a cause.

Gold chains with lockets or finger rings tied to the wrist with ribbon have no place in a baby's wardrobe. A baby is jewel enough in itself without being bedecked with these artificial and inappropriate decorations; in many cases they fit too snugly and interfere with freedom of circulation. These things will find a place soon enough in future adornment, but the one and only concern in infancy is absolute attention to wholesome growth and freedom of movement.

The fact that a baby tugs at a chain or fumbles with a ring is proof enough that it is nervously affected by it.

Of course all discussion of tight bands, pins sticking and buttons rubbing tender skin should be especially pertinent to babies and little children who cannot talk or explain their feelings. A baby's nap may be disturbed and fail of its usual benefits because the diaper is drawn too snugly and pinned so that the safety pin rubs on the tender, soft flesh.

Wrong Diet Results in Peevishness

Not all causes of irritability, of course, are due to improper clothing. Food is a vital factor in children's daily conduct. This does not imply consideration of the diet problems of the delicate or abnormal child, which, of course, should be under the supervision of a physician.

When a baby gets fussy almost the first thought is that hunger is the cause, and in many instances it is; as soon as it is fed the crying is over. But many mothers fail to make this supposition when older children become quarrelsome or disobedient in the house or on the playground.

How often have you noticed that a lively scrap takes place just before noon or late in the day before the evening meal. If the children have eaten nothing between meals, they are hungry and they take their revenge for this empty feeling on their associates.

To send Johnny after a loaf of bread just before a meal may be just the last straw to his "load of appetite" and if he is saucy and says he doesn't want to go, perhaps an apple or some simple cracker will brace him up. Remember that a usually courteous child does not become impudent or irascible without some reason. His obstreperousness is not premeditated.

If a child is cross after meals he may be eating too heavily or perhaps his diet has been unwisely balanced for several days, either containing too much starch or too much acid, or what is more commonly the immediate cause of his testiness, he is probably constipated.

On the train or during any trip even the most well behaved children become fussy and fretful. This comes not only from change of food and irregular meals but also from loss of sleep either at night or at naptime. Probably nothing causes snappiness and fits of temper more quickly than intermittent and abbreviated rest periods, either in adults or children. So let's leave them at home under the normal routine or have great patience with their lapses when traveling.

At home if a child is cranky in early morning it is quite certain to be because he has kept later hours than he should, or because although he was in bed he was kept awake by noises elsewhere in the house.

A baby who has been out riding in his cab may have a headache because the sun was glaring down in his eyes for half an hour while mother or nurse girl chatted with friends, quite oblivious of this alarming condition of affairs. Then if he cries when he gets home, the family wonders what in the world can be the matter, giving never a thought to the truth that a scorching, blinding sun had shone all too mercilessly on those delicate tissues.

Even in his crib the sun may sometimes creep insidiously through the crack of a shade and annoy the baby. This is a feature of daytime napping that should be carefully watched.

So Let's Look to Their Comfort

They're worth it, aren't they—the extra attention or expense we may have to apply toward making boys and girls more comfortable and happy and efficient? It is not the impossible or difficult course that these clothing corrections and proper habits demand, but merely that constant, persistent, conscientious regard for best health and highest development on the part of parents that will not overlook basic causes for ill temper and sudden petulance.

These responsibilities are peculiarly those of the home and mother or the person who attends to the child's physical needs, but they react to all the associations and outside environment of the child. The mother who makes adequate adjustments at the time they are needed will soon be gratified to find that she has preserved her own store of nervous energy and promoted her own peace of mind.

How to Avoid Lead Poisoning

CAREY P. McCORD

IN ABOUT 300 kinds of industrial work, there are opportunities for acquiring lead poisoning. In the greater number of these trades, cases of lead poisoning are only occasional. In about 110 instances the entire industry essentially centers around lead operations. In these, lead poisoning may be very common. About five years ago in a factory dusty with lead oxids, 1,200 workers are said to have suffered from lead poisoning at the same time.

This disease does not regularly or immediately result from exposure to lead. Some workers may be exposed over a period represented by years and never exhibit any signs of lead intoxication. Others may appear unaffected by lead over a period of years and then quite suddenly develop a severe form of the disease.

The majority of workers are readily susceptible to the injurious action of lead. One lead molder within my observation has acquired lead poisoning four times during the past twelve months. Even in the presence of this susceptibility to the effects of lead a considerable time is necessary before the distressing characteristics of the disease are brought about. Usually a worker must be exposed for at least two weeks before any difficulty arises.

How Lead Gets in the Body

Lead commonly enters the body through one of two channels: either through getting into the stomach and intestinal tract by swallowing, or through the inhalation of dusts or fumes in the process of breathing. The last mentioned mode of entry is probably more disastrous than ingestion, since following ingestion the greater part of the lead passes out through the bowels, without having done great harm.

When lead is absorbed into the body either through the intestinal tract or through the lung tissue, it is taken up by the blood and stored in various organs and tissues. More lead is stored in the bones of the body than in any other tissue. Lead may be slowly taken up into the body without any distressing symptoms necessarily arising. Months or years later this apparently harmless lead may be thrown out into circulation and bring about typical lead poisoning.

Because of these uncertain factors in the development of lead poisoning, every worker in lead is continuously on the uneasy seat. On the development of any pain in his abdomen, any constipation, any weakness, any headache, he is immediately worried as to whether or not this represents the beginning of lead poisoning.

In many large establishments having definite lead hazards, every week the worker is likely to see several men disappear from their work places and word is passed around that they have been "knocked out" by lead. This entire situation is inimical to the best interests of the workers and of the manufacturer. The morale of the working group tends to become broken down. When several cases of lead poisoning occur almost a panic is noticeable among the remaining workers. Many times workers quit or absent themselves a considerable portion of time. Labor turnover is inevitably high.

Hazards in Making Storage Batteries

In order that HYGEIA readers may better know of the opportunities for acquiring lead poisoning, the trade processes in a single industry will be described. The making of storage batteries is chosen as a suitable industry because in it lead poisoning may be acquired from lead fumes, lead dusts, and from the hand to mouth introduction of particles of lead oxid. Since the making of batteries varies considerably in different factories, the specific practices in one plant—the Cincinnati Storage Battery Company—will be referred to.

The first step in the making of storage batteries is the molding of the lead grids. Some notion of what a grid is may be gained if you imagine a section about 5 x 5 inches being cut out of the string portion of your tennis racquet, and then surrounded by a fairly substantial frame. The interstices of these grids are later filled with lead paste and after electrical treatment (to be described) they become the plates found in the battery.

In the making of these grids, slab lead is placed by hand into open melting pots. A high temperature is maintained under the pots by gas furnaces in order to keep the lead in a molten state. A scum of waste arises on the surface of the molten lead, which must be skimmed off at frequent intervals. A tension of lead vapor is practically always present in the air around the pots. This means that above every pot there must be a hood with adequate suction. In the molding process, in order that the many small interstices in the grids may be perfectly made, it is necessary that the molten

lead be kept in a very fluid state. This is aided by the presence of a small amount of antimony placed in the slab lead. This antimony is believed to favor the giving off of lead fumes from the melting pots.

Here then is the first opportunity for acquiring lead poisoning, and unless the management continuously provides means for the removal of these fumes some of the workers who make a living by molding these grids will develop lead poisoning.

The next step in the manufacturing of batteries starts with the mixing of lead oxids, litharge and red lead in suitable proportions. The proportions of litharge and red lead are different in making positive and negative plates. These oxids are in the form of fine dry powders. The process is a very dusty one and protection through the use of enclosed mixing mills is highly desirable. Sometimes this mixing is done as an open process in a small closed room with all exposed workers wearing respirators. This stage is continued by mixing these combined lead oxids with water, which results in a ball of red pasty material resembling a batch of red clay.

Pasters Cannot Afford to Be Careless

This lead paste is forced into the interstices of the lead grids already described. Pasting is carried on by hand, the paste being worked into the interstices with wooden paddles. Inevitably, the pasters accumulate lead paste on their hands and clothing. In time this dries out and dust is formed. In pasting, lead is sure to get into the body of the careless worker.

Any worker who eats his lunch without proper washing is apt every day to carry over several milligrams into his alimentary tract. The person who carries a cigaret to his mouth with pasty fingers is flirting with lead colic.

The pasted grids after drying are smoothed down by exposure to revolving brushes. This buffing is a very dusty and hazardous work, unless proper suction for the removal of dusts is provided. The grid may now be spoken of as a plate. Several are connected together with copper bars and are taken to the forming room. The plates are submerged in long troughs filled with diluted sulphuric acid and subjected to a current of electricity. When the plates are sufficiently treated, the positive ones are covered with a coating of brown lead peroxid, and the negative ones with gray sponge lead. In this process the risk of lead poisoning is not so great.

The plates are next sent to the assembling department. Here there is carried out proper grouping of positive and negative plates. Between each pair of plates a separator of chemically treated wood is placed. Small lead bars are used to connect the various groups of positive and negative plates. These are melted on by oxyhydrogen flames. This is fairly close work and the workers so engaged are exposed to the fumes of lead. Thus again lead poisoning will come about unless protection is secured.

The assembled plates are now ready for placing in containers. The containers commonly seen in wet batteries are of hard rubber or wood. Where wood is used, glass chambers are inserted into the wooden frames. Whatever is the type of container the plate units are fitted into it and the electrolitic solution placed around them. After charging, this becomes the battery seen in your automobile, aeroplane or radio.

These processes are cited as examples of the many kinds of jobs utilizing the services of a large number of our working people that are filled with opportunities for causing lead poisoning.

Detecting the Presence of Lead Poisoning

A frank case of lead poisoning is easily diagnosed, but the atypical and milder cases may be exceedingly difficult to detect, because lead poisoning is so protean in its manifestations. It simulates so many other diseases. At times it may closely resemble rheumatism, gastritis, nephritis or appendicitis.

The usual means for diagnosing lead poisoning are not always reliable. Some physicians put great store in the finding of a blue line in the gums. This is important, but in any large factory having a lead hazard, several men will exhibit this blue line without any other evidence of lead poisoning. It is proof of exposure only. Other physicians examine the body waste for lead. It is frequent that lead is found but this constitutes no proof that lead poisoning is present. It merely means that exposure to lead is taking place and that lead is being taken into the digestive tract. Other signs or symptoms such as headache, loss of appetite, vomiting, constipation, pallor and weakness, are all related to lead poisoning, but these also are manifestations related to dozens of other conditions.

In short, it is difficult for any physician to be quite sure of his diagnosis of lead poisoning, unless the case is a well established one.

From this recitation it is obvious that lead workers would be greatly served if some reliable test were developed whereby it would become possible to assure them at any time of their freedom from lead absorption and the lack of any indication of serious import.

It would be of even greater worth to be able to approach a worker after testing him, and say, "Unless your work is changed you will in a few days become a clinical case of lead poisoning."

In other words, if lead poisoning is a cumulative disease and its distressing manifestations arise only when sufficient quantities of the lead have been taken into the circulation, it should be possible to measure the quantity of lead

within the body and to warn the worker of impending danger. Such a test as this would make possible the forecasting of lead poisoning. Given such a test it would come about that these imminent cases of lead poisoning might be treated and put on non-hazardous work, and thus prevent the occurrence of loss of time from work and suffering.

For about two years the laboratories with which I am connected have been on the quest of such a test. They have found a method that holds out some promise of merit. Although the results have been by no means perfect, they have been such, in my own opinion, as to ward off a number of cases. Using this test I have been able to say to a considerable number of lead workers: "Although you are apparently now quite well, you are on the ragged edge of having trouble from lead. Unless you are removed from your dusty lead trade and treated, you will probably have lead poisoning in a severe form in a short time."

Many times such statements have been "poohpoohed" by workers, who assured me that they never felt better; did not have an ache or a pain. Unfortunately for them, but fortunately for the progress of the inquiry, such workers have been carried to the hospital within a reasonably short time of the prediction. If this test, after a critical checking up of its merits by other investigators, and through additional work in the laboratories, proves to be a measure of lead absorption, it is believable that the hazardous lot of the lead worker may be somewhat ameliorated.

This test of the blood for lead poisoning is not so simple that any one may carry it out. It is a highly technical procedure, calling for the best efforts of carefully trained physicians and laboratory workers. Nor is it to be regarded as a panacea for the control of lead poisoning.

In order fully to avoid lead poisoning there is the necessity for continuous alertness and action of the worker, the employer and the physician. The employer is obliged to provide all possible mechanical devices and processes for the control of dusts, the elimination of fumes, etc. He must furnish washing facilities and lockers that will tend to eliminate lead from the bodies of workers. He also has a duty in the education of his employees to the hazardous aspects of their employment and the means for avoiding this disease.

The worker in the lead factory has his obligation as well. The careless worker will nearly always become "leaded" even though the manufacturer has provided all possible protection. The worker is obligated to utilize means provided for his protection and to secure treatment at the first sign of lead poisoning manifestations.

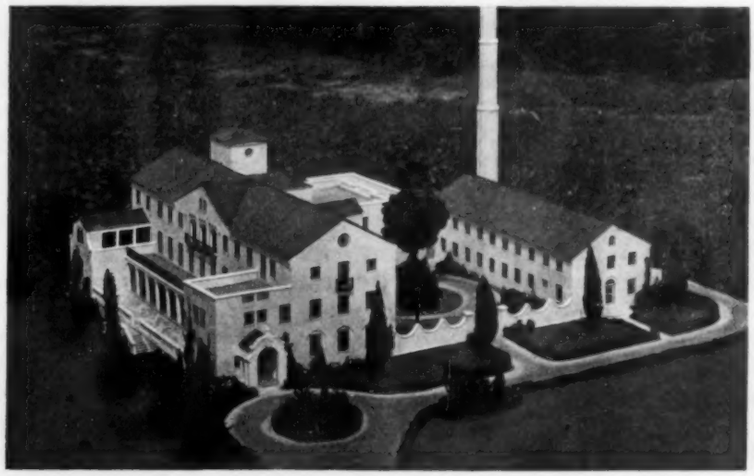
A Hospital Any Town Could Be Proud Of

A SURE cure for the much talked of shortage of country doctors may be found in a hospital such as the one pictured here in miniature size.

This is a small model of the Ponca City General Hospital being built at Ponca City, Okla. It was on display for the first time at the scientific exhibit of the American Medical Association at Atlantic City, May 25-29.

The lid of the miniature model lifts off and allows one to see inside. There is the complete equipment of a small modern hospital.

The miniature is an exact reproduction of the hospital as it is being built and is constructed on a scale of one fourth of an inch to the foot. The design is by Schmidt, Garden and Martin.



In architecture the hospital is Spanish mission style. It is built on a horizontal plan with provision for free use of fresh air and sunshine and is well suited to the southwest country. When completed, the hospital will have accommodations for fifty adult patients, ten babies and twenty-eight nurses. The nurses' home is the small building to the right.

The hospital is complete, having its own laboratory, x-ray department, operating rooms, kitchen, dining room and laundry. All these service facilities are sufficient to accommodate 100 patients; space for the addition of fifty beds will be obtained by extension.

This hospital is one of thousands of small hospitals that symbolize medical and nursing service to such communities.

Three Score and Ten

BROCK C. HAMPTON

COMPARED with the length of life of lower animal species, the present span of human life is notably shorter than that of many of the reptiles. However, it is longer than that of many birds and most other mammals.

Buffer, a Swiss physiologist of the eighteenth century, thought that man ought to live to be 200 years old. Buffon believed that, excepting accident or disease, the span of human life should be 90 to 100 years.

Owen and others established the length of biological life on the basis of bone development, fixing the normal life at five times the number of years required to perfect the bones. Since it requires twenty years to complete the bone process in man, his normal life span would be 100 years, according to Owen. The actual longevity of man, as is well known, is much below these figures, which are based on theoretical assumptions.

Apparently the upper limit of life's span does not impose the tax on feminine strength that the early middle age is credited with doing. For census figures since 1850 show that during each ten year period, there were more women than men at the age of 90 or over, and from 40 to 80 per cent. more women than men at the age of 100 and over.

Average U. S. Citizen Lives 56 Years

The average length of human life in the sixteenth century was between 18 and 20 years, and at the close of the eighteenth century it was still less than 25 years. At the close of the nineteenth century it was between 45 and 48 years, and today it varies in different countries from less than 25 in India to 60 years in New Zealand, and about 56 years in the United States. The records show that the average span of life in this country has been lengthened approximately fifteen years since 1870.

The median age is sometimes considered by statisticians. It is that age which divides the population into two numerically equal age groups, one group being composed of persons older and the other of persons younger than the median age.

The median ages of the total population show uninterrupted increases since 1820. Although it is probable that this change in the median age has been due in part to a reduction in the birth rate, resulting in a decrease in the relative number of young persons in the total population, it has been due largely to an increase in the average length of life.

The following table, taken from the fourteenth census of the United States (1920), shows for the total population the median ages for the census years for the past 100 years:

Census Year	Total Population: Both Sexes	Male	Female
1920	25.2	25.8	24.7
1910	24.0	24.6	23.5
1900	22.9	23.3	22.4
1890	21.4	21.8	21.0
1880	20.9	21.1	20.6
1870	20.1	20.2	20.1
1860	19.4	19.7	19.0
1850	18.8	19.1	18.6
1840	17.8	17.8	17.7
1830	17.2	17.1	17.3
1820	16.7	16.6	16.7
	White Population Only		
1810	16.0	15.9	16.1
1800	16.0	15.7	16.3

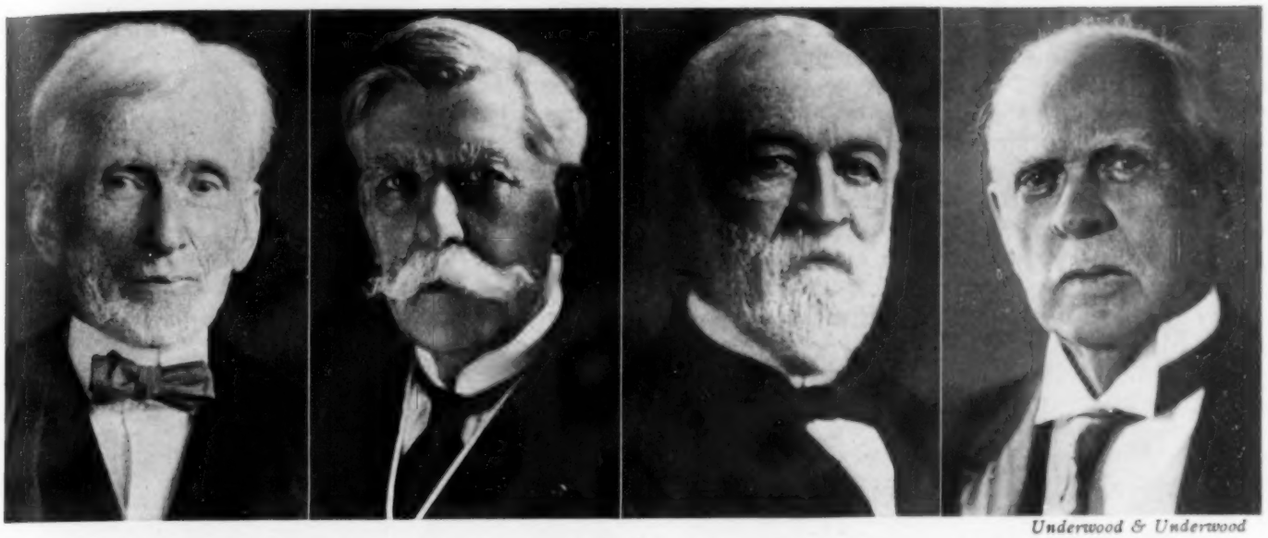
Before the beginning of the present work in preventive medicine, health and long life were regarded as due to the special physical endowments of each person, or to his observance of some sanitary precepts not universally known.

It is not uncommon even today to hear old people asked for the secret of their lives which has given them the privilege of living two or three decades beyond three score and ten. The question has probably been asked from time immemorial. The multifarious replies range from the ridiculous to the sublime aphorisms of the philosopher.

Horace, the Latin poet, said in answer to the question: "Moderation in all things." For wisdom and brevity combined that answer has never been greatly improved.

May Inherit Tendency to Long Life

The school of hygiene of Johns Hopkins University through its department of biometry and vital statistics has for some time devoted a part of its research activities to the study of life duration as a general biologic problem. Dr. Raymond Pearl of that department recently published a report on a preliminary investigation into the factors influencing longevity.



Underwood & Underwood

Here are four active leaders who have passed the four score mark. From right to left are:

1. Justice Joseph McKenna of the U. S. Supreme Court, whose keen legal mind is undimmed by four score and one years.

2. Oliver Wendell Holmes, the oldest justice with the U. S. Supreme Court, whose alert mind is functioning at 83.

3. Charles Manly Stedman, 83, who represented the fifth district of North Carolina in the Sixty-Eighth Congress.

4. General Isaac Sherwood, 89, the oldest representative ever to sit in the House. He represented the ninth district of Ohio.

Professor Pearl communicated with individuals living and in the possession of their principal faculties at extremely advanced ages—at those ages near the upper limit of the human span of life—but his questions were based on scientific inquiry into certain bionomic forces. Such factors as sex, marital history, age of parents and grandparents at death, and longevity of other blood relatives were considered. And although the first group studied was too small to admit of any definite conclusions—there were twenty-six men and twenty-four women between the ages of 90 and 105 years—Professor Pearl believes that the innate forces of heredity are of great importance in reaching extreme old age.

The unscientific speculation of ignorance and superstition regarding the conditions that promote or prevent long life came to an end with the development of the medical sciences in the last and the present centuries. Practically all of the communicable diseases are now known to be caused by organisms that live as parasites within the body, and no doubt many other diseases are, in some measure, due to repeated action within the body of pathogenic organisms. In many instances these organisms are definitely known, their habits are understood, and a method of defense against them has been worked out.

Highest Death Rate Among Infants

We are at least on the road to the achievement of applied science predicted by Pasteur when he said: "It is within the power of man to cause all parasitic (germ) diseases to disappear from the world." What this knowledge and its application have meant to the human race can hardly be overestimated.

A study of mortality statistics shows that the highest human mortality occurs in the earliest years of life. Probably one fourth of the deaths occurring yearly throughout the world occur in the first year after birth. There are some countries in which between 300 and 400 out of every 1,000 children born, die during the first year after birth.

In the United States registration area in 1900, one fifth of all the deaths occurred in the first year of life, and almost one third of the total deaths occurred in persons under five years of age; but in the following twenty years, conditions affecting infant and child life had so improved that in 1921 the corresponding rates were only 15.5 and 21.4 per cent., respectively, of the total deaths recorded.

After this early period of maximum mortality, the death rate falls until the age of puberty, from which time it rises slowly and continuously, reaching the second maximum between the ages of 60 and 75 years.

Expectation of Life Increases

It is clearly evident, then, that the saving of lives in the early age groups, by preventing deaths that scientific sanitary knowledge now makes preventable, will have the result of advancing the average age of life. Information on this point is given in the life tables, prepared by the bureau of the census and the actuaries of life insurance companies. In these life tables the expression "expectation of life" appears. This is not a mysterious term; it means simply

that the records of millions of lives indicate that most persons attaining a certain age have lived a certain number of years afterward. It is a probable figure based on the average.

In 1920 the complete expectation of life in practically all ages had increased over that for 1901 and that for 1910, according to the bureau of census tables. A child under 1 year of age in 1920 had given to him an expectancy of five years more of life than one born in 1901; a 5 year old child had almost three years added to its life; at 10 years of age, two years added, and so on. In 1920, in spite of the abnormally high mortality from the influenza epidemic, there was a gain in the expected length of life over both 1901 and 1910 in practically every age.

The Scottish life tables for 1921, compiled recently by Dr. J. C. Dunlop, show a general increase in the mean length of life of both males and females as compared with 1911. This gain in Scotland between 1911 and 1921 amounted to about three years for males and a little more than three years for females. These gains in life expectancy compare closely with the gains in the United States, and are interesting because of the similar conditions of longevity which they reveal in the two countries.

Country Woman Has Best Chance

The life tables reveal other interesting facts. They show what at first glance might be termed the mortality paradox, that is, that the death rate for women is lower than that for men at practically every age group.

The most favorable mortality conditions in the United States are found among women living in the country; and, notwithstanding the fact that better health protection is afforded in most cities than is found in country districts, the most favorable general mortality rates are still found in the country. It must be borne in mind, however, that the reporting of mortality is probably far more nearly complete in the cities than it is in the country. Also, many cities have lower death rates than the country. The better health protection afforded by the health departments of most cities is weighed against urban congestion and certain rural conditions which may be especially conducive to health.

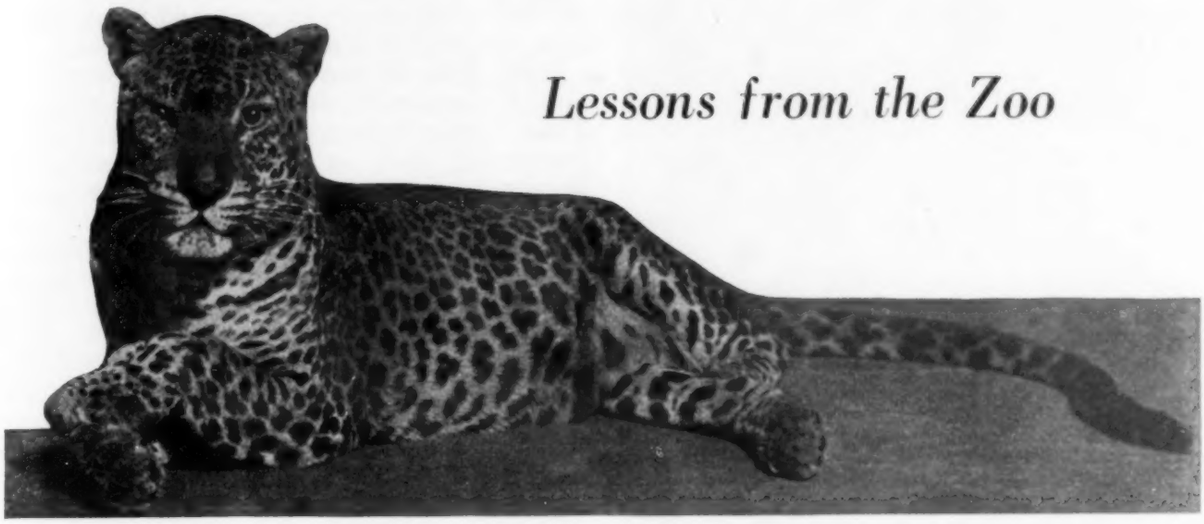
There is no evidence that the *limiting* age of human life has been advanced in the years during which records have been made, but the many lives that have been saved and the years of life that have been added by the application of the preventive principles revealed especially by the sciences of bacteriology and immunology have advanced the *average* length of life and have given a greater expectancy of years to both men and women of nearly every age.

Death Rate Halved in Fifty Years

Some time ago a prominent health officer of a large city made the following official entry in the records of his department: "Generally speaking, where fifty years ago two persons died out of every one thousand population, only one died last year." He added that this saving of life was the result of the application of scientific sanitary principles and preventive measures instituted by the health authorities. If that man may be considered truly great who can make two blades of grass grow where only one grew before, what can be said of those who have made conditions such that only one death now occurs where two deaths occurred fifty years ago?

Although eugenists tell us that every child has the right to be well born, and students of bionomics and biometry say that certain biological factors that contribute a tendency, at least, to long life are inherited, unfortunately we cannot choose our parents and grandparents and great grandparents among those whose extreme longevity may tend to predispose us to be centenarians. But we can regulate our mode of life in a manner that will give us the best results from our physical and mental heritages.

If we will observe established hygienic rules, follow the precepts of sanitary science for the protection of ourselves and others, shun transient health fads, establish good health habits, strike the golden mean between work and play, and have health inventories taken regularly by means of periodical physical examinations, we will increase the possibility of a useful life beyond the scriptural statute of limitations.



Lessons from the Zoo

JAMES FREDERICK ROGERS

"DON'T feed those bears! Can't you see what that notice says?" I was visiting the bear dens in the zoo and was startled by the command. I had read the sign, "Don't feed the bears" but always, when I had been there before, some one *was* feeding them, and the beasts appeared to be having such a good time that it seemed quite the proper thing to do. I looked upon the warning as having been once in effect but now considered unnecessary.

"Yes, I know they feed them," said the park officer in gentler tones, "but it's against the rule and we are making a special effort to see that the rule is obeyed, for we can't afford to have sick animals to show to the public. The trouble is that on Sundays and holidays we can't watch all the people all the time. Oh, they mean all right, but they don't know any better."

My curiosity was aroused and I wanted more information on this subject. I wanted to know from some one in authority just why that sign, "Don't feed the animals" was posted, so I went to the director of the zoo and asked him why I should not feed the bears. He replied:

"We feel much as a mother does when her young children are fed sweets and other foods between meals by the kindly disposed visitors in her home. We used to have a great many digestive disorders among the animals as a result of overfeeding by visitors, but by vigorously prohibiting the public from giving numerous tidbits and by regulating each animal's supply of food according to its physical needs and the amount of exercise it takes, these troubles are now held in check. The animals in the zoo, placed there for the instruction and pleasure of visitors, are much too valuable to permit of indiscrimate feeding by kind-hearted friends."

Now most mothers, as I know them, are not disturbed when their young children are fed sweets and other indigestible foods that appeal to the taste, but they rather approve of the performance and are glad enough to get some of the tidbits themselves.

Animals More Wisely Fed than Children

As a consequence, both in children and adults, the most common cause of sickness, to say nothing of ill humor and other mental symptoms which are not usually considered sickness, is the eating of wrong food at the wrong time. And, as with animals, the upsetting food is an invention of man—candy, cakes and other it-tastes-so-good articles which man has but recently invented and with which wild animals have never had any experience whatsoever. It is not their ordinary food, such as nature furnishes them in the wild, that upsets them. They do not know that these human inventions are not good for them.

But we humans ought to know what is good for us and for our cubs just as well as the keeper of a zoo knows what is good for his beasts, and it would be a good thing if every fond parent would sometimes make use of a notice, "Don't feed these children," for the animals in the home "are much too valuable to permit of indiscriminate feeding by kind-hearted friends."

But the daily feeding of zoo animals and of human kind is of much more importance than the prohibition of their occasional feeding by visitors. It is as necessary for their health that they should receive each day just the right

materials for growth, repair, and for getting about, at the right time as that they should not be given the wrong things at the wrong time. This is not always an easy matter in the zoo.

In the wild, the animal finds just his needs and eats just as much as is good for him, but in the zoo he is like the child in the home—absolutely dependent on the wisdom of his keepers. The beasts are better off than the children in that they never have access to the unnatural foods of the candy store at all hours nor to the supply of cakes between meals. The keepers of the zoo are more anxious and careful than are most parents to learn and to select the right foods in the right amounts.

The food for a tiger must be very different from that for a buffalo, and it is difficult to keep some animals because their natural food cannot be approximated. Anteaters do badly in captivity and it is impossible to keep a moose. No captive animal gets quite his natural food in the natural way. Even the big cats seldom get the whole carcass of an animal. The lion's meat is handed to him, he does not tear down the prey, and one result is that the jaws of the captive-bred lion differ from the jaws of the wild-bred lion just as our twentieth century jaws differ from those of Neanderthal man.

Many valuable animals and many more valuable children have died because they were not properly fed. Some fine antelopes were lost to the Philadelphia zoo because, by mistake, they were given too large an amount of soft vegetables and too little hay. A most intelligent college-bred woman, daughter of a college-bred mother, said recently that she knew she lost her 4 year old boy because she did not know how to feed him. She was taught nothing at school either about feeding herself or her family. She is only one mother among thousands. The number of babies that die every year from improper feeding would make a great army, yet the zoo mothers could have given most of them valuable hints, especially as to the value of mother's milk.

Friend Hippo believes in frequent bathing. Far handsomer creatures than he have not half his talent for cleanliness. He often may be seen scouring himself on the edge of his cement bath tub.

Both animals and humans may survive but be sickly and defective. Dr. Herbert Fox of the Philadelphia Zoological Gardens tells in his very interesting book on "Disease in Captive Wild Mammals and Birds," how some of the monkeys developed a disease of the bones similar to that which is met with so commonly in children—rickets. Evidently something for building good bone was missing in the food of those animals.

Monkeys Need Milk and Leafy Vegetables

Physicians began a search to find what was wrong with the diet, for the animals were much too valuable to be allowed to become diseased and deformed. The monkeys had been fed on rice, bread, potato, raw peanuts, bananas, corn, apples and onions, and that would seem to be a sufficient variety. It was discovered, however, that this food was low in phosphorus, which is an important constituent of bone; that the fat which seems to have to do with bone-building was short; that there was too little protein, but about eleven times too much starchy material. The investigator pronounced it an ideal diet for producing this disease of bone.

It was not hard to remedy the difficulty, not by applying to the contents of the pharmacy, but by the addition of fresh whole milk and leafy vegetables to the diet. The keepers were not slow in making this change and the monkeys have lived happily ever after so far as this deforming disease is concerned.

We are now teaching children in our public schools (what the animal in the wild always knows) that it is just such things that they need in their daily diet. Moreover, in cases in which the mother looks upon her child with the concern for his welfare that is manifested by the keeper of the zoo, she is seeing that the child has the vegetables, milk and fruit that are necessary for his growth and repair.

A far more common disease among children than rickets is carious teeth. If this disease had just recently attacked us, instead of having been common for a long time, we would be much more concerned about it. However, like the zoo keepers, some persons are concerned about it, not only because rotting teeth are sad to look upon but because they cost us a handsome sum every year in fillings and pullings and artificial teeth, besides interfering with our feeding and otherwise affecting our health.

A person would have to hunt a long time among wild animals to find a carious tooth; even in the zoo they are rare. Dr. and Mrs. Mellanby of England have been making some interesting studies of this disorder and they have discovered that the teeth of puppies are not only rendered liable to decay but become malformed

if they are fed on certain foods used all too exclusively by many humans. Experiments made recently on groups of 7 year old children in a London hospital seem to prove that a deficiency of such foods as whole milk, butter and eggs has a marked effect in the production of decay of the teeth even in the comparatively short period of ten months.

Animals know instinctively what to eat or they too would have bad teeth. They know something else that we humans are just discovering—the need of sunlight for proper growth and development. Puppies kept from the light have bad bones and children reared in sunless tenements are especially prone to rickets. Plants need sunlight in order to grow and so do animals, if they would develop in healthy fashion. So profound is the general influence of sunlight that the brilliant colors of birds are lost when they are confined in dark and gloomy houses, but are retained and restored when the cage is made bright and sunny.

Animals Get Plenty of Sleep and Exercise

The zoo animal is an adept at resting. No matter how much his visitors would like to see him perform he takes his nap regardless of their presence. He sleeps well because he is well fed. He may have dreams, but they are not due to a stomach overfilled with cakes and candy, if the zoo men can help it. We doubt whether such near relatives of ours as the chimpanzee or gorilla would lose a wink of sleep to attend the movies.

When the animal wakes up he is restored and his nervous system is bubbling over with energy which flows, without the command or persuasion of a physical trainer, into muscular exercise. He does not take his exercise; his exercise takes him, even though it must be carried out in cramped quarters and in a most unnatural way. The zoo animals have considerable exercise but they do not overexercise. Even in their native haunts they never indulge in Marathon runs nor in the lifting of heavy weights. They know enough to quit when they are tired.

Besides rickets, decayed teeth and digestive disturbances, another common disorder of man is constipation. The inhabitant of the zoo again proves himself the superior animal, for constipation is practically unknown to him. In man, this trouble is often blamed on insufficient exercise although any amount of exercise alone may fail to cure it. Zoo animals are probably not nearly so active as they would be in the wild state and their close observers think that they are free from this serious disorder partly because of the quality and the not excessive quantity of their food, but more because they empty their sewers when nature tells them to. They consider it too important a matter to be put off until a more convenient moment.

Photos by F. M. Woodruff, Chicago Academy of Sciences

This monkey Madonna and Child are too valuable to be allowed close association with human folk. They must be viewed through glass or at a distance, for man is apt to scatter disease germs with his coughs and sneezes. Being a near relative, the monkey is subject to some of our diseases.

By following Nature's warning the zoo animal keeps himself cleaner inside than the average man. He also keeps himself cleaner outside than many humans and the wise keeper gives him every chance to do so. I recently saw a wild hog taking a bath in his cement bathtub; he was scouring himself all over with the rough edge of the tub.

His domesticated cousin, who waxes lazy and corpulent on excess of human concentrated foods, has acquired a bad reputation because he is usually given no bath; instead he has six inches of mud to walk and lie in, and he couldn't keep clean if he tried. But the domestic hog will keep clean when his keeper gives him half a chance.

The animals most nearly resembling man, the chimpanzees, must be viewed either from a distance out of doors or through a partition of glass indoors. This glass costs money and it was not placed to keep away cold air, for the cage opens out of doors and the animal goes out and comes in as he chooses. Nor was it for the purpose of preventing the great ape from reaching out his long arm and seizing the incautious visitor, for the cunning baby chimpanzee, as well as the big fellow, is on display only through a glass screen.

These animals are not only much too valuable to permit of indiscriminate feeding, but they are too valuable to be sneezed at and coughed at and sprayed indiscriminately with the germs of disease which are always carried about in the human nose and throat. Being more nearly like ourselves they are more subject to our diseases. Of course we would not mean to give the chimpanzee tuberculosis or even a cold, but many zoo apes have contracted diseases in this way and died.

The human animal goes about spraying his fellows with germs of colds, influenza, pneumonia, scarlet fever, measles, diphtheria, or whooping cough. This would not occur so often if he would only turn his face away from his fellow human, or cover his mouth with his handkerchief, for we cannot all carry in front of us a germ-proof screen.

It was once believed that monkeys and apes contracted tuberculosis because our climate is colder than that to which they were accustomed, so they were kept in heated and poorly ventilated cages, but now they are permitted to go out of doors if they wish, and they make use of the opportunity except in the severest weather. It is just this sort of treatment that agrees best with the human being and he is copying the animals to a hopeful degree in shunning overheated, stuffy rooms, and getting into the out-of-doors when he has the opportunity to do so.

We have been such a nation of stay-in-the-house creatures that societies have been formed to encourage outdoor recreation and the president of the United States, regarding the matter as one of national concern, recently called a national conference on the subject. We might have learned our lesson on this subject from the animals long ago. They are never indoors save for rest or to escape dangerous extremes of heat or cold.

Animals Need Right Mental Atmosphere

Though they may seem indifferent or contemptuous, many of the zoo animals are genuinely interested in their human visitors, for animals are fond of agreeable company and human society is preferable to none at all. The zoo animals suffer, as man does, from little or nothing to do; they are often homesick for their native haunts and companions and sometimes die as a result.

In many ways they are more emotional than man. Their health is affected by fear, whether of real or fancied danger, and the good keeper does his best to keep them happy. They have their own social incompatibilities, and they are like humans in sometimes getting selfish trouble makers for roommates. "A trouble maker in a group increases the mortality not only by quarreling and fighting but by depriving others of food and rest and thereby reducing their resistance to infection."

The machinery of living is very much more complicated for man than for his animal friends, but the causes of his bodily and mental ailments, of his physical and mental inferiority are of his own making and they lie chiefly in the abuse of those means by which he has lifted himself above the animal. He might be in all things superior to animals if he would condescend to question them occasionally as to their ways. In the maze of health teaching with which he is surrounded he can well afford to ask of the animals as to first principles in hygiene—food, light, air, rest, warmth, play and mental atmosphere so that he may correct his faults and take a new start on the highway to health.

We need to take lessons first hand from Mother Nature and from her unspoiled children, the wild animals, and we may well consider whether our children are too valuable to be given less care and thought than are bestowed upon the denizens of the zoo.

"Healing" by Autosuggestion and Magic

ABRAHAM MYERSON

THE Coué fad, which was so vigorously alive but a short time ago, is now just about as vigorously dead. But just as the public health official studies the facts of epidemics after they have passed in order to draw conclusions which may help to prevent future epidemics, so the student of social psychology may properly study a dead fad as a sort of preventive measure for the future.

Couéism is a direct descendant, in the left hand direction, of hypnotism. Years ago it was discovered that persons could be thrown by appropriate means into a curious mental state in which they responded in an automatic and helpless sort of way to suggestions made to them.

For example, here is a man who is hypnotized, let us say, by a skilled operator; the suggestion is made to him in the hypnotic state that at such and such a time in the night he will get up and eat a meal. Though this is contrary to his usual habit, he will without realizing why he does it, arise at the appropriate time and eat a meal. Out of all the mystical theories that surrounded hypnotism, there finally was drawn the scientific conclusion that hypnotism is a means of producing increased suggestibility.

Suggestion or suggestibility is recognized by students of the human being and of all social animals as a normal phenomenon. Emotions spread from man to man, thoughts diffuse from one individual to another, and groups of persons act in harmony and follow one another through this psychological force which we label suggestion. By hypnotism, suggestibility is increased. The critical faculties are dispersed, and the individual becomes a sort of automaton, following more or less blindly the suggestions of others.

Hypnotism Clinic at Nancy

There was established at Nancy in France a clinic for the use of hypnotism as a means of curing sickness. Hypnotists there, so long as they were sound-minded medical men, selected the cases which they were to treat by this method. They did not treat tuberculosis or pneumonia, cancer or heart disease, diabetes or pellagra, broken legs and inflammatory processes in general, but they limited their procedure to disorders of the emotions and wrong mental habits. This school at Nancy reached a great height of popularity and then gradually subsided and lost its vogue, because even in its limited way it was a form of magic, as I shall later show.

There came to this clinic years ago a Frenchman named Coué, who noticed that the leader of the clinic used very simple methods. He would say, "Go to sleep," and the susceptible patient would go to sleep. In the interests of increased efficiency Coué set himself to work to discover some formula by which the patient could treat himself. He finally worked out a formula based on the idea that if a person will suggest to himself that whatever ill he has will gradually disappear, it will gradually disappear. He believed that the suggestibility of the organism extends to the tissues of the body, and that heart, lungs, liver, spleen, kidneys and blood vessels will respond to the suggestion given them by the brain.

Then the fame of Coué commenced to spread. People came to his clinic in large numbers, all were instructed in the formula, and there commenced to be whispered throughout France, and thence throughout the world, that a great healer had learned how to cure most nervous diseases and many other afflictions by a group of words. Persons who suffered, and had not been helped by medicine, flocked in ever increasing numbers to get the message and to apply it to themselves.

The thing operated very much as the 520 per cent. per year Miller scheme of investment operated on what might be called the pyramid basis. Miller relied on an ever increasing number of investors to make his scheme possible, for he paid each earlier investor from what a later group gave him, relying on the later group to be so numerous as to make this possible. The thing finally collapsed when the number of later investors dwindled.

So with Couéism and all other schemes of that type. A few persons were helped. They were very eloquent in their reports and by their enthusiasm infected others, who flocked to receive treatment. Out of the increasing numbers, enough were helped, or thought they were helped, to increase his standing and the epidemic. But, after a while, those who had not been helped commenced to talk. The returns from this group are always much slower in

making themselves felt, but when they finally do the social epidemic is over.

How is one to distinguish between the true and the false in medical matters? Magic and the love of magic are still prevalent in the community and, as is well known, medicine started as magic. But medicine evolved gradually into science, and one must learn to distinguish between them.

Distinguishing Magic from Science

1. Magic never bothers itself to learn about the causes of things. The early magician when he wanted to make the ground fruitful did not study the causes of fertility, did not analyze soils, did not study bacteria; all he had in mind was his wish that the ground be fruitful.

The beginning of knowledge is the study of causes, in medicine as in the rest of science. The establishment, therefore, of a diagnosis by all procedures possible is essential to a science of medicine, and nonessential to a magic of medicine. So that the physician or healer who contents himself with a mere recital of the troubles of the patient or who does not set going the machinery for diagnosis is essentially a magician.

In every community there are healers who are not so prominent as Coué or Schlatter, but who are willing to undertake the treatment of any one without examining the organs of the body, without the use of x-rays, without the study of urine and blood, without anything that resembles a thorough study of the situation.

2. The second great characteristic of magic as contradistinguished from science is its belief that by willing any thing hard enough the thing can come to pass. Thus, early accounts of magic tell of the use of magic carpets upon which a person sat and willed himself elsewhere, and lo! he got there. In our later day, this wish magic has taken the form of stating that if you will yourself to be efficient or happy or beautiful, all you have to do is stand in front of a mirror, look yourself firmly in the eye, and say repeatedly, "I will become beautiful," or "I will be happy," and lo! you do become the thing desired. This is the stock in trade of the so-called psychologists, whose use of the name probably accounts for the rapid revolutions in their graves of William James, Münsterberg and others.

Science recognizes the power of the will in accomplishment, though there may be differences of opinion as to its freedom. But willing or wishing for science constitutes merely the beginning of achievement. A man wills or wishes the power of salesmanship; he does not look himself in the eye and repeat that he will become a salesman, but he studies the market, he studies successful salesmen, he makes an analysis of the effect of various types of approach, and he tries to understand various types of people. His will operates to build up a system of knowledge; one that is slowly and painfully built up and that reaches effectiveness over a period of time.

Man desires to fly from one place to another, but to do this he must develop the whole science of electricity, the whole craft of mechanics. He proceeds from one type of conveyance to another until the time comes when he flies in airships, not by any magic but by a persistent building up of knowledge through persistent experimentation, which finally yields the result desired.

So science also wishes to cure disease, but it has no holy shrine at which this can be accomplished, no king's touch. It has laboratories, hospitals and patient workers, who slowly and painfully gather together facts about disease in the sick room, through postmortem examinations, and through the widest possible use of chemistry and physics. The magician thinks of the will and the wish as the potent factors; science regards them as the very beginning of things, and nothing more.

Only One Personality in Cult

3. Your magician is always a solitary worker. Coué, Schlatter, and all the cults that rage here and there are based upon some one person of outstanding personality, who, by an intuition or inspiration claims that he has seized upon truth. The lesser lights, too, acknowledge no master and no colleague. Science, however, is fundamentally cooperative. It builds generation after generation.

A very striking example of this is the final evolution of insulin as a treatment for diabetes. A man discovers as a result of his anatomical work that there are queer little places in the pancreas, one of the organs of digestion, which stain differently than the rest of the pancreas, and these are named after him, the islands or insula of Langerhans. These islands become part of the anatomical facts which every medical student must learn. Meanwhile, any number of other workers study diabetes. Some expound its principal symptoms, others make elaborate chemical studies both of urine and of blood; physiologists turn their attention to the way the sugar and starches of the body are handled by the digestive and other forces; finally, it is learned that the islands of Langerhans have something to do with diabetes; this, at a long period after the original anatomical fact was discovered. Then a group of men, under the leadership of Banting, takes this series of facts, evolved from the labors of at least a thousand men and gives it a practical value by manufacturing from the islands of Langerhans a substance called insulin, which thereupon becomes a great therapeutic agent.

There has been no one magician in this; every worker in his publications has freely acknowl-

edged his debt to men, now dead perhaps, and has freely given credit to his colleagues. If one studies Couéism, or any such system of magic, he always finds an egoism, however disguised. The healer stands alone. He may have found a school of followers, but he has no colleagues.

4. The exponents of magic in whatever form it manifests itself always cite what Oliver Wendell Holmes called the "positive instance"; that is, they cite only instances that bear out their theories or beliefs. They cite only those cases in which they seem to have been successful and they never mention in a respectful manner their opponents. If out of ten cases they have had two successes, they mention the two successes, but they fail to mention the eight failures. They glory in the spectacular, and so they give prominence to those cases in which the change came rapidly.

Scientist Is Own Sternest Critic

The essence of science is to be skeptical of itself. A man who is a scientist must only believe he is right when he has endeavored in every way possible to prove himself wrong. He must be the sternest critic of his own successes and of his own technic. He must cite his failures as fully as his successes. This candidness of spirit is essential to the final gathering together of the facts that bear upon the treatment which is to be utilized. Medical men themselves frequently fall into the error of reporting only their successes, or forming conclusions from too few cases.

Statisticians say that it takes somewhat over 600 cases before you can rule out "probable error." If you toss up a penny twenty times in succession, it might fall "heads" nineteen or even twenty times, but if you toss it up 600 times, the probabilities are that it would fall 300 times "heads" and 300 times "tails," or thereabouts. Magic never rules out chance or coincidence as a factor, whereas science must rule it out. If you walked along the street, of the first twenty cars that you saw, nineteen might be Packards; this would establish a false percentage. If you continued walking, and kept on counting the cars, that percentage would drop very rapidly, especially after you got into the hundreds.

5. In dealing with diseases, it is essential to know that a great many diseases tend to get well of themselves and that, even in the chronic diseases, periods of betterment often occur, irrespective of treatment. So if a healer or a physician takes charge of a case when the organism is getting ready to be well anyway, he gets the credit for his cure. If he treats enough cases, any healer, no matter what hokus-pokus he indulges in, will have to his credit a certain number of cures that were bound to come no matter what he did. He also will run into a certain number of remissions, persons who were bound to get well, at least for a short time. Even serious disorders, which end fatally, often have these periods of remission.

Non-medical persons who deal in systems of cure, such as Coué, do not seem to realize this. Anything that happens coincidentally with, or shortly after whatever they do, they attribute to themselves, and thus they make an appeal to sufferers who themselves do not understand the course of disease, and who do not clearly differentiate between one disease and another.

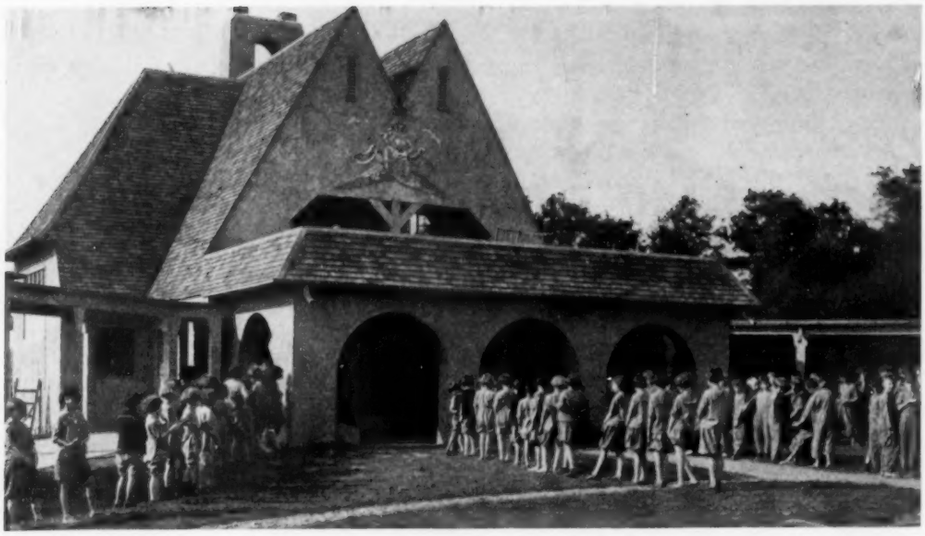
A man learns that Coué "cured" a man with a chronic cough; he has a chronic cough, and therefore his can be cured by Coué. But the chronic cough which was helped by Coué may have been the chronic cough of a hysteric, or of an asthma which disappeared for a time, and the other man with a chronic cough may have tuberculosis, which is a totally different matter.

Couéism Was Only Magic

Of course, Couéism was not even autosuggestion. A man was told to say, "Day by day, in every way, this or that is getting better and better," but he was told to say it—the suggestion came from without. He was merely carrying out instructions just as a man carries out instructions when he takes a medicine three times a day. It was a magic formula, like the magic formula by which magic caves are opened, magic doors unlocked, people are turned into stone, dead come to life, by which one peers into the past, present, and future, in all the fairy tales that have been written. It was a fairy tale, a short and easy cut toward getting well.

Unfortunately, in this world of hard fact, there is no short and easy cut to anything worth while. Humanity must labor to conquer the world in which it lives, to unlock secrets of nature, to cure itself of ills and to improve itself in character. Men cannot get better merely by willing to get better, by any formula embodied in legislation, by new laws passed. Painful education is the road to betterment, whether of mind or body.

The point is that whenever anything new is broached, especially in the treatment of disease, people should ask themselves: "Is this magic, or is it science?" If it takes no account of cause, if it cites only the cures, if it has some one formula by which everything in the world is to be helped, if it is not self-critical, it may safely be discarded and neglected as a form of magic, and like Couéism, in the long run it will die a more or less natural death.



In to dinner at Forest Hills Camp

The Gingerbread House

ROSANNE AMBERSON

LIKE the miniature Gingerbread House of fairy tale lore, the Gingerbread House of reality, a summer camp at Northville, Mich., operated by the city of Detroit, is another children's paradise. After cities with tall smokestacks and towering buildings, the Gingerbread House seems a bit unreal, a colored page from a quaint, old book. Even as you look you almost expect to see Hansel and Gretel coming hand in hand from the forest to gaze with wondering eyes on the miniature village before them.

The alchemy of this modern Gingerbread House is the sort that turns weak, underfed little bodies into strong, rosy children. Those Detroit children who are undernourished and susceptible to tuberculosis find in the very child-size of the camp the first ingredient of magic. Fresh air, good food, healthful play are the material aids that help the magic of the Gingerbread House to weave its spell. Together they form a potent medicine that increases weight and vitality and strengthens resistance to disease.

A Mother Goose Village

The Gingerbread House is really not one house at all, but a semicircular camp of connected houses—dormitories for boys and girls, a dining hall, a recreation building and a storage tower. From out the covers of her book Mother Goose has come to guard the entrance of the dining room, while Old King Cole from his place of honor over the recreation building summons his faithful retainers. Above each entryway is pictured in colored plaster the illustration of some favorite bookland friend.

Quaint little doorways, wide low windows, tables, chairs and beds built to scale, all make a strong appeal to the child's imagination and turn the process of growing strong and well into a new and delightful adventure.

The children who come to the Gingerbread House—what a listless cityworn group they are! Fifty boys from wondering six-year-olds to masterful twelve-year-olds, fifty little girls from little sisters of six to big mothers of twelve make up the party. Many are underweight and at least 50 per cent. of them have lived in homes in which there are cases of tuberculosis. None of them have ever had the proper chance to be strong and well, and yet none are actually sick. The Gingerbread House is a camp for prevention, not a hospital to cure. Sickness is never mentioned.

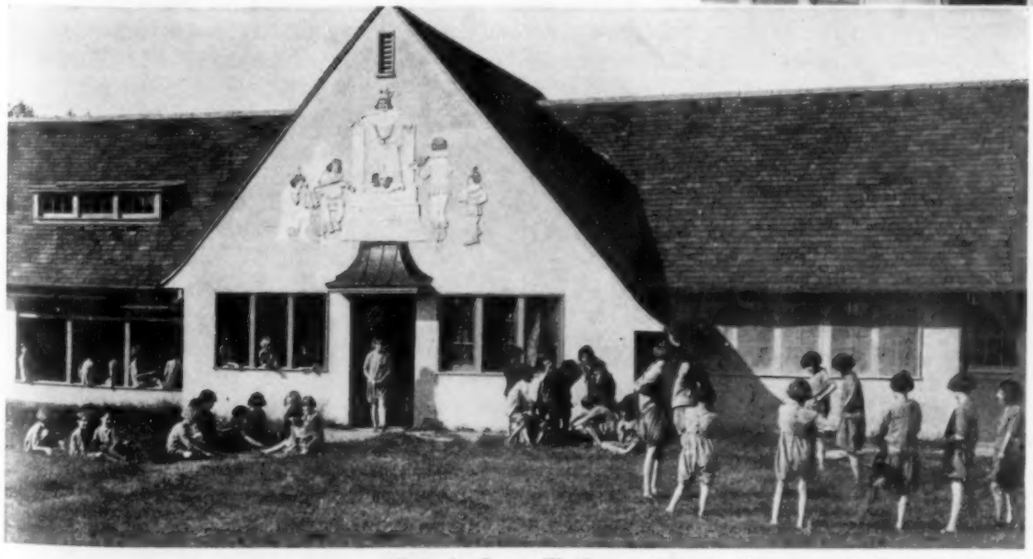
As soon as these fifty boys and girls reach camp they are fitted out in brand new Gingerbread House clothes, jumpers for the boys, middies and bloomers for the girls, shoes, stockings and sweaters. The ragged trousers and torn shirts, the faded dresses held together with safety pins that often do duty for a whole summer's wear are packed away. They take with them the last suggestion of the old city life.

Preventive care is the idea behind the development of the Gingerbread House. A careful weight chart is kept for each child, every loss or gain is indicated, and a proper correlation of weight, height and age is sought. The whole

How many fairy princesses have been rescued by valiant knights from just such a tower as this one! The tower is a part of a miniature village at Northville, Mich., to which are sent undernourished children from Detroit. After a summer at the Gingerbread House, they return home stronger and healthier boys and girls.

Old King Cole, Mary and her Little Lamb and even old Mother Goose herself stand guard over the entry ways to the dormitories, recreation hall and dining rooms in the little village. These Mother Goose characters are pictured in colored plaster and help make the summer health camp a children's paradise.

The buildings are all child size, with quaint little doorways, wide low windows, and tables, chairs and beds built to scale. Growing strong at the Gingerbread House is the greatest fun in the world.



Photos by George W. Hance. Courtesy of American Child Health Assn.

daily schedule is worked out in proportionate hours of rest, play and nourishment. Under the supervision of four nurses and four recreation leaders working with one head nurse, the Gingerbread House goes through a carefully planned program designed to create normal health.

Particularly in the hours of play do children love Gingerbread House magic. In the morning games, contests, songs, drills fill a happy two hours. In the afternoon an excursion to the neighboring woods may turn the whole camp into a band of roving Indians on the warpath. All the joy of hayrack rides, picnics and excursions into the surrounding country comes to each child. The two months are packed with happy memories to carry back to the city and share with wondering friends.

The Gingerbread House camp has now been in operation five years. On its five years' investment Detroit has received unusual dividends. It has purchased rosy cheeks, firm muscles and invigorated bodies for nearly 600 children. Within one month or even two, the camp cannot hope to remedy physical weaknesses that have existed for years. It can and does, however, succeed in putting a fair amount of weight on a large number of children and starting them with increased vitality on a winter of precarious city life.

Each Week Adds Pounds

Statistics cannot do justice to the work of the summer camp. They can only give an idea of material accomplishment, the approximate number of health pounds gained by each camper. In five years with a varying length of stay every boy and girl has averaged a certain weight gain. In 1920 and 1921, with an average stay in camp of one month each child approximated between three and 3.25 pounds gain. In 1922, the camp period was lengthened to six weeks and a gain of 4.5 pounds was recorded. During 1923 and 1924, the average stay was again lengthened and the average gain in weight once more increased. In individual cases in which children were kept in camp beyond the usual six or seven weeks, their weight curve seemed to reach a practically unchanging norm.

Since the rate of gain seems to bear a direct relationship to the amount of time spent in camp, the question arises of possible value from a more extensive period of camp life for every child. As such an extention of time brings added cost to the city, it is doubtful whether any experiment on a large scale can be carried out.

The weight charts of the various children, despite the question they raise of possible increased efficiency, all answer the question that has been asked again and again: "Are the results of the camp lasting?" Children examined in December following their summer outing have not gone back to their precamp condition. Some decrease in weight may have occurred, one or two of the children may have contracted tuberculosis, but the large majority of the group maintain their summer gain and display increased vigor throughout the winter. Two months of healthful living constitute a boost that carries a child past the many bogies of midwinter and contributes a definite increment toward his ultimate health.

In the last two years a number of changes have been made in the daily schedule, convincing camp authorities of the possibilities in further changes. The mere substitution of one chef for another, achieving a break in the monotony of the menu, produced a noticeable weight gain. The institution of a morning rest hour created another increase. The plan of the camp at the present has not reached perfection and whether any inelastic schedule can ever reach the desired goal, is an open question. The psychological effect of monotony, the individual needs of each child, these and other problems have yet to be considered.

This shows the layout of the Gingerbread House, a health camp for Detroit children.

Ridding the Household of Insect Pests

LOUIS GERSHENFELD

IN ANY campaign for the extermination of pests of one kind or another, it is necessary to become familiar with some of the important characteristics of the insects to be destroyed. These facts may be found in a study of their life histories.

It is impossible to recommend one method for the destruction of pests that would be the ideal procedure for use under all conditions. A technic for the eradication of insects that has been found to be efficient in a given environment or from certain materials may not be the satisfactory method for another occasion. All the weapons that may be employed should be known. With such knowledge, an individual will be in a better position to carry out successfully a campaign aiming at the destruction of insect pests.

Temperature control in the eradication of insect pests from the household is very effective. It is one of the simplest methods, and one which is not frequently employed. If a temperature slightly below freezing is maintained constantly in infested houses for a few weeks, the eggs, newly-hatched young, and most of the adults of many of the commonly found insect pests will be exterminated. This technic can only be used in those localities where the winter is very cold and the homes are untenanted (being used for summer residence only).

High Temperatures Will Kill Pests

A more efficient method for destructive purposes that can be readily applied in households is to maintain high temperatures. A temperature of 115 degrees F. for one hour is found sufficient to destroy quickly fleas, flies, roaches, bedbugs, and most other insects and their eggs. The presence or absence of humidity is not apparently of much importance, if this degree of heat is maintained. The superheating of houses in summer or during other favorable climatic conditions, from 115 degrees to 130 degrees F., is practical. This degree of heat will not affect household materials and equipment.

A very efficient method of freeing infested clothing and other materials of insects and their eggs is to expose them in rooms or compartments for an hour at a constant temperature as indicated.

If practical and convenient, clothing may be boiled in water or exposed to the heat of hot irons, as in the process of laundering.

Liberal use of hot water or live steam is an effective procedure for the destruction of both the active insects and their eggs. This may be employed, providing there is no danger in affecting furniture, fabrics and other materials. It is especially convenient for the destruction of bedbugs in beds made of materials other than wood; ants in the home and garden, and moth eggs on fabrics and clothing that will not be injured by water.

The rays of the sun during the warm season also can be used to obtain the necessary degree of dry heat. The old-time custom of sunning fabrics and materials to kill the larvae of clothes moths is very effective and can be readily employed.

Cold Storage and Storage in Paper

The use of all kinds of cold storage as a method of protection against injury by fabric pests of all kinds is practiced extensively today. Cold storage rooms or warehouses are today a part of the equipment of all well conducted business enterprises and in use by dealers in upholstered furniture, blankets, curtains, robes, carpets, furs, woolens and other merchandise. The temperature maintained is rarely below 40 degrees F.

This temperature, if maintained constantly, will protect articles only during the period of storage. If the clothing or articles were not cleaned, brushed or aired thoroughly as they should have been before being brought into storage, any larvae, especially of moths, will not be destroyed. They remain inactive, however, and incapable of causing injury. If the material is refrigerated for a few months and then subjected to a warmer temperature, the larvae generally die, although they may become active.

If the storage concern not only guarantees to protect articles during the period of storage, but also aims at the destruction of clothes moths in the articles intrusted to them, the clothes are cleaned thoroughly and usually exposed suddenly to a number of changes of temperature. They are first placed in a refrigerator for a few days, then stored in a warm room. This interchange of temperature is repeated and the material is finally placed in the storage proper. These sudden changes from cold to warm temperatures have been found to be effective in the destruction of all moth larvae and many of other forms of insect life.

Every one is familiar with the so-called moth-proof bags that appear on the market; they are employed for the storage of all kinds of wearing apparel and are made of paper of various types. Some of these are impregnated with an odor of tar or other volatile agents. These agents have no distinct advantage other than the imparting of an odor in the closet or the storage room. Any ordinary strong wrapping paper or even several thicknesses of newspaper is just as satisfactory. Moths do not eat paper to get into clothing, carpets, or articles that are wrapped tightly. Care must be observed that bags or other wrappings are not torn or unsealed, and that the folds are bent back, otherwise moths may find their way into the bundle.

Moth-proof paper bags or tight wrappings do not kill moths. *It is, therefore, of great importance to be sure that all articles stored away are first freed of moths, their eggs and their larvae.* Frequent brushing, cleaning, beating and aeration in the sun, or even dry cleaning should be practiced if necessary. Special care should be given to the brushing of seams, pockets and crevices, during the cleaning. Then the articles may be wrapped in paper, or placed in tight chests or sealed boxes, and stored where convenient without danger of infestation.

Hats, clothing, furs and other articles can be protected by placing them, newly cleaned, into unbroken cardboard boxes, such as suit or hat boxes, and sealing the covers with adhesive tape or with gummed paper.

The average trunk or chest is not tight enough to keep out moths. Cedar chests, if well constructed, are usually tight. The characteristic odor is due to a volatile oil that adds to the efficiency of these chests, as it possesses some insecticidal value. It is, however, important that clothing, furs, skins, pillows and carpets placed in cedar chests should receive the same careful preliminary treatment before storage.

Storage places in attics, basements, cellars, sheds, or empty rooms should be arranged in orderly fashion and dust and dirt should be frequently removed. All windows and openings should be screened and the compartments ventilated at frequent intervals. Boxes or packages in which materials are wrapped for storage should preferably be placed on racks or shelves raised from the floor. Newspapers, magazines and similar articles that tend to absorb moisture and thereby impart dampness to the environment should not be kept around the house. If needed, they should be stored in tightly covered compartments.

Many drugs and chemicals to be mentioned later are known as repellants. As their name signifies, they do not necessarily kill the insect but it is repelled or driven away, owing to the fact that the environment becomes uninviting.

This principle is being applied in many of the so-called moth-proofing processes, in which wool and other animal products are rendered immune to moths. The principle of the procedure is that the chemical, which is generally colorless, odorless, stainless, non-inflammable, non-irritating and non-poisonous, will adhere to the material and repel the moth larvae, because the latter apparently do not care for the treated material as a food. If there are no other animal products about (for the commonly observed clothes moth will only attack goods or materials made from animal products such as wools, felts or feathers), the moth larvae will eventually die from lack of proper nourishment.

Since the sale of material so treated and the introduction of this treatment in the household is a recent event, it is perhaps best to wait to see whether such treatment is effective. It is true that the average life of a garment is of comparatively short duration so that the statement that moth-proofing processes are permanent would hold good here. However, the great value of this procedure is in the permanent moth-proofing of articles that are to be kept for long periods of time. This will apply in particular to carpets, blankets, furniture, felt linings in pianos, antiques and mounted birds. It may even apply to a greater extent to woolen hose, sweaters, bathing suits and other materials that are washed many times and in many ways. In such cases, it may be found necessary to moth-proof the material more than once.

It will also be a difficult matter to prove before a court that holes in materials are caused by moth larvae. It is, therefore, poor policy for some manufacturers who employ this process to distribute so-called certificates or bonds as a guarantee that the material is immune from moth damage.

We will have to wait for time to show us whether chemical processes will keep material of animal origin immune from moth damage permanently, regardless of the existing conditions under which the material may be found. This, however, should not necessarily discourage merchants and laymen from attempting to moth-proof materials. The precautionary remarks are merely made so as to warn individuals not to be too optimistic.

In order to prevent attacks of wood by ants and other pests, posts and timbers to be used for similar purposes are treated with various chemicals. It was first thought that such treatment would prevent the pests from boring into the timber throughout its period of usefulness. Today we know that this method is only partially effective and that the timber may be eventually destroyed.

[*To be continued in August issue.*]

How to Put on Weight

THE animal body has often been compared to an engine. It burns sugar and starch, fat and protein (meat), with the production of heat and energy. The heat keeps the body warm and the energy "makes it go." Continuing the comparison, the faster the body "goes," the greater the amount of fuel consumed. During sleep the fires are banked and only enough heat and energy are produced to warm the body and keep up the circulation and breathing.

But unlike a man-made engine, the body possesses wonderful self-regulating devices. When the fuel is running low, we grow hungry. When sufficient fuel has been taken in, there comes a feeling of satiety and contentment. When more fuel than is required for immediate needs is taken, it is not burned up at once but is stored, in the form of fat, for a rainy day.

One who wishes to put on weight should follow these general rules:

1. *Eat more food than the body burns.* Many other factors must be taken into consideration before such advice will be helpful. Nearly all foods must undergo elaborate preparation (digestion) before they are carried to the furnaces and storehouses of the body. Unless one has an appetite, food is repugnant and digestion is slow or incomplete. Dainty service and cheerful surroundings improve both appetite and digestion.

2. *Have, or acquire, an appetite.* Another way to increase the amount of food that is available for storage as fat is to reduce the activities of the body. Most persons, as they approach middle life, illustrate this fact. By taking less exercise and indulging more freely in flesh-pots, they become "fair, fat and forty."

3. *Take less exercise and eat a little more food than the appetite calls for.* But do not take so little exercise that the appetite is lost, the digestion impaired, or the bowels constipated. Rest cures, for fattening purposes, should be taken only under special circumstances and under the guidance of a physician.

4. *Eat foods that are fattening.* Such foods contain fat, sugar or starch in concentrated form. Foods with a large proportion of water and substances that are only partly digested, such as green vegetables, are not fattening. Not only are they not fattening, but they take up valuable room in the stomach.

Some of the most fattening foods are butter, cream, eggs, toast, crackers, cereals, sugar, milk sugar, and combinations of them. These foods may be taken as part of the regular meals, or between times if care is taken not to blunt the appetite for meals. A little more cream and sugar may be put on the breakfast cereal: a little more butter may be spread on the toast, with a spoonful of marmalade.

A glass of rich milk (or fruit juice containing milk sugar) with some crackers may be taken during the morning. Several pieces of candy may be taken after lunch or dinner—they add just that much more fuel. Toast or crackers and butter and jam, followed by a cake or two, with afternoon tea will help. A glass of milk or hot cocoa, with more crackers, at bedtime may complete the day's menu.

5. *Remove all possible sources of worry.* Scientifically there is no evidence that emotional states affect the furnaces of the body one way or the other but it is common experience that worry will make a person lose weight.

A few additional comments are necessary. Some persons belong to the lean kind, some to the fat. The reasons are not clear; for present purposes, they may be called heredity though some authorities believe they are to be found in the behavior of the endocrine glands. But certain it is that some persons cannot be fattened unless they are given a "cure," and they will not remain fat when they resume their vocations.

HYGEIA

A JOURNAL OF INDIVIDUAL AND COMMUNITY HEALTH

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Plain Facts about Health and Disease

HEALTH NEWS OF THE MONTH

Medical Association in Annual Session

The annual meeting of the Fellows of the American Medical Association took place at Atlantic City, May 25-29, at which time more than 5,000 physicians assembled to hear papers read defining the progress of medicine during the past year.

Of particular importance were the statements as to the present status of the work of Drs. George F. and Gladys Henry Dick, who have isolated the toxin of the streptococcus responsible for scarlet fever, devised a skin test for scarlet fever similar to the Schick test used for diphtheria, and worked out methods for preventing scarlet fever and for making antitoxin to be used in treating it. At the same time other investigators reported their results with the use of the antitoxin developed according to the methods of Drs. Dochez and Blake, using the same form of toxin and the same type of streptococcus, but injecting the horses by a different method.

Other investigators reported new methods for visualizing the gallbladder, previously injecting the patients with substances which made the organ opaque to the x-ray.

Several scientific sections met to hear a complete résumé of knowledge regarding the liver, including not only its function, but also methods of determining the presence or absence of disease.

In several of the scientific sections special attention was paid to problems of great importance to the public health, including the hygiene of swimming, tests for drivers of motor vehicles, the use and abuse of cosmetics and the sale and use of infant foods.

The House of Delegates of the American Medical Association likewise concerned itself with problems involving the relationship of the physician to the public. Of great importance was a resolution which condemned any contract arrangement that would place a commercial concern as a middleman between the physician and his patient, since it was believed that only by maintaining such an intimate relationship could the patient receive the best attention.

The discussion was especially significant so far as it related to the promotion of periodical physical examinations. Obviously it is to the patient's interest that this examination be made each year by his family physician, who will know his circumstances and who will be able to record his progress regularly and efficiently.

The House of Delegates also took exception to the regulation by the government of the amount of alcohol that a physician may prescribe for a patient and the intervals at which such prescriptions may be given. A questionnaire issued some years ago by the American Medical Association indicated that at least 50 per cent. of all physicians are convinced that alcohol has distinct use in the practice of medicine. If this be admitted, the physician should obviously prescribe the medicament at such times and in such quantities as he thinks best for the good of his patient.

Another resolution that gained the approval of the House of Delegates dealt with the listing of physicians in the classified telephone directories of various cities. At present the pages of telephone directories in many communities are an appalling sight, with full page advertisements of chiropractors, osteopaths, faith healers and cultists of all of the various nondescript types. It was urged on the officials of telephone companies throughout the country that they limit the classification "physicians and surgeons" strictly to those who are the possessors of M.D. (doctor of medicine) degrees, signifying the holding of a diploma from a well recognized medical college and licensure by the state to practice medicine.

Finally, the House of Delegates resolved that it go on record as opposing any restrictions on the proper study of scientific fact and theory in regularly established scientific institutions, this being considered an appropriate comment on

the attempt of legislatures in several states to oppose the teaching of the theory of evolution and related biological, ethnological and anthropological facts. M. F.

THE MOVIE IN SEX EDUCATION

IT HAS come to be the conviction of most parents and teachers that clean, sane, correct information about matters of sex must be imparted to children as early as they are able to comprehend it.

As soon as a child mingles with others in school, or even before the school age, he is almost certain to hear allusions to sex from older children. It is seldom possible to keep a child innocent of all knowledge of such matters and the question is whether he shall be given the right knowledge in the right way to offset the distorted, vulgar misinformation which is so widely current among even quite young boys and girls.

Opinions differ widely as to the best method of procedure. Some would have children instructed about reproduction and development and even the more intimate facts of the sex relation by their teachers in school. Others believe that the parents in the quiet of the home should impart such information.

One of the things that make it difficult to keep from children a distorted, vulgar idea of these matters is the movie blatantly advertised as presenting a moral lesson, but in reality salacious and suggestive. Such films are sometimes advertised to be shown to men only at one period of the day, to women only at another session. These pictures are seldom scientifically correct and seldom educational in the better sense of the word. Even those that are correct should be shown only to carefully selected audiences of parents and teachers of the young.

J. M. D.

HYGIENE OF SWIMMING

FOR some years the specialists in diseases of the nose and throat, who constitute the section of the American Medical Association dealing with such problems, have been concerned with plans for securing hygienic conditions in bathing pools, seaside and lake resorts. A committee of this body has now submitted a final report, which establishes the fundamental considerations.

The committee recommends that suitable notices be placed in all swimming pools and bathing places warning persons with colds, head infections, running noses or ears, or catarrh, that swimming or diving tends to force infections into the sinuses, or air spaces within the bones of the head, and that infections in such places may result in serious, if not fatal, consequences.

It is suggested that oiled wool, or other effective materials, be used to plug the external ear so that contaminated water may not enter and set up inflammation of the tube. The committee warned particularly against breathing-in, when the head is more or less under water, diving feet first with the nostrils open, and blowing the nose, coughing, or spitting in the tank.

Experience has shown that rapid lowering of the temperature of the body on bathing in cold water and exposure of the body to the breezes while sitting in a wet bathing suit make one more likely to develop infection. It was suggested, therefore, that a time limit of forty five minutes to one hour be placed on bathing in swimming pools, which naturally will tend also to decrease somewhat the number of bathers using the pool over a given period.

In order to carry out their instructions practically, the committee worked out notices and posters for use in swimming pools and in bathing resorts. Copies of the notices and the rules for sanitation and safety of swimming pools, as well as a poster developed according to the idea of the committee, appear elsewhere in this issue.

M. F.

TESTING THE VISION OF MOTORISTS

THE increasing number of motor vehicles and the resulting congestion of city streets and country roads have made the driving of motor cars a task not lightly to be undertaken by those handicapped either by poor vision or slow reaction time. A special committee of the American Medical Association, appointed through the section devoted to diseases of the eye, has issued a report which received the endorsement of the House of Delegates of the association.

According to the recommendations of this committee, every person driving a motor vehicle should be required to present to the motor license board in his state a certificate from a reputable physician to the effect that his eyesight is equal to a certain minimum standard, which means essentially at least half the normal vision. Persons having double vision are, of course, disqualified.

The committee's recommendations provide also that persons with only one eye may be passed, provided that the good eye is normal, that the hearing is exact, and that they are fully capacitated in all other respects, physically and mentally.

The number of serious accidents and fatalities resulting from the driving of motor cars by those not fully qualified is a menace sufficiently serious to demand the careful consideration of every one interested in the public safety and the public health. M. F.

HYPNOTISM

IT SEEMS inevitable that local outbreaks of hypnotism, like pimples on the face of the boy coming into manhood, should appear periodically. These outbreaks, like the pimples, are strongly indicative of immaturity. Certain members of the medical profession and of the general public have not yet attained mature knowledge of hypnotism. Hence it remains in the realm of mystery, strongly appealing to the imagination and readily lending itself to exploitation.

Exploitation of hypnotism is based either on honest but uncritical enthusiasm or on deliberate fraud, or both. Of course, the more dramatic the exploitation the more likely is the public press to add to it.

What are the cold facts regarding hypnotism, especially hypnotism in medical practice? Perhaps the best way to answer this question is to split it into several parts and briefly answer each.

1. *Is there such a thing as hypnotism?* There is. Times innumerable it has been conclusively demonstrated that under certain conditions certain persons pass into a state resembling, but different from, sleep; in this state they are peculiarly suggestible.

2. *Have certain persons so-called "hypnotic power"?* They have not. That is to say in the procedure of hypnotizing there is no peculiar influence proceeding from the operator that dominates and controls the subject. It is not an instance of one mind controlling another, except in the ordinary sense that one person wishes another to do something and expresses this wish and the second person complies. The hypnotic state is a purely subjective phenomenon.

3. *Can a person be hypnotized against his will, without his knowledge, or at a distance?* He cannot. At least he cannot in the ordinary sense. The writer once hypnotized a patient by mail. But this patient had been hypnotized many times, was a good subject and very anxious to be hypnotized.

4. *Is hypnotism useful in the treatment of disease?* Occasionally it is. Very rarely is it the best treatment. It is quite useless in organic disease, in all surgical affections and in such things as Bright's disease, tuberculosis, ulcer of the stomach, catarrh, skin diseases. Its usefulness is entirely restricted to so-called functional disorders; that is, various forms of nervousness.

Since the time of Mesmer (1733-1815) thousands of physicians and many laymen have repeatedly treated such disorders with hypnotism; the result has always been the same. After a shorter or longer period the practice has been abandoned because other methods have been found to be better. Consequently, so far as the writer knows, there is today no clinic in the hands of competent neurologists in which hypnotism is used more than occasionally. Nor is it taught in medical schools. Assuredly it would be if it were worth while.

5. *Is hypnotism dangerous?* It is not. In the hands of an ignorant or unscrupulous person it may be mildly injurious. H. T. P.

ANOTHER NEW DISEASE

THE rapid development of new processes and new materials in the industries results in previously unknown health hazards. At the recent annual session of the American Medical Association held in Atlantic City, Dr. F. L. Hoffman of New Jersey reported fifteen cases of radium necrosis, a new type of disease of the jaw bone due directly to the occupation of the victim.

These fifteen young women were employed at a radium plant in painting watch dials with a luminous paint containing radium solution. To draw the brush to the fine point necessary in applying the paint to the dial, these girls wet the brush with the lips and in this way minute quantities of radium were introduced into the mouth and lodged on the gums between the teeth.

The result was the devolpment of a condition at first closely resembling phosphorous necrosis, so prevalent in former years among workers in match factories. The resulting necrosis, or death of the bone of the jaw, was followed by a profound anemia and caused the death of three, and possibly five, of these girls. X-ray pictures taken by dentists show several stages in the development of the disease and in one case the jaw removed after death has made possible a study of the bone changes.

There seems little doubt that a serious new occupational disease has been brought to light. The manufacture of luminous dials for watches is not a new industry and material containing radium has been used for this purpose for some time. It is probable that other cases have been wrongly diagnosed. The situation needs expert study. J. M. D.

SLEEP AND SLEEPLESSNESS

JUST how and why we fall asleep has never been determined, although the problem is one that has attracted the interest of hundreds of scientific investigators. Such studies as have been made indicate that the onset of sleep is closely related to changes in the nervous system and the circulation of the blood.

Thus, one view has it that there is a fall of the blood pressure and a slowing of the pulse during sleep; these result from the fatigue of that portion of the brain responsible for keeping the blood vessels properly constricted. On the other hand, certain observations have shown that a man who is lying awake at night has a lower blood pressure than one asleep during the day, so that the change in blood pressure would seem to be independent of the sleep phenomena. Another point opposed to this view of the cause of sleep is the fact that the tissues of the brain become restored during sleep, and that tissues are not restored during a lessened circulation of blood; actually, a maximum of blood circulation is needed to remove the products of cellular activity and to restore them to a freshened condition.

Another interesting observation concerns the temperature of the body. In a person accustomed to sleeping at night, the temperature is lowest at about 3 o'clock in the morning, whether he sleeps or lies awake. If he changes his habits and sleeps by day instead of night, this temperature curve is reversed, and at about the end of six weeks the fall takes place so that the minimum is reached about 3 o'clock in the afternoon. If he should change his habits again at the end of another six weeks the temperature will again reach its lowest point at about 3 o'clock in the morning.

It is therefore clear that the function of sleep is associated with the rhythmic activities of the body. It is the belief of Dr. C. P. Symonds that the establishing of this machinery is responsible for the regular onset of sleep through the development of certain habitual paths of nervous action, known as reflexes.

Essentially sleep resembles stupor or unconsciousness. However, it varies in that its effects are restorative, whereas a patient emerges from unconsciousness in a somewhat dazed condition and with his mental powers dulled. A person goes to sleep and awakens rather rapidly, but the awakening from a stupor is a slow process.

Interesting also is the fact that one may select certain stimuli for awakening which will be very active, whereas others will go unheeded; for example, one may awaken easily at the ringing of an alarm clock and disregard the regular sounding of a fog horn which operates every morning at the same time. Again, soldiers during the war would sleep soundly while an eighteen-pounder field gun was firing at frequent intervals, whereas a certain sharp sound not usual would awaken them easily.

These observations as to the cause of awakening have suggested to Dr. Symonds the possibility of applying certain stimuli to producing sleep. These involve the establishing of a regular form of getting ready for sleep, including such matters as the business of undressing, getting into bed and reading in bed. When sleeplessness persists for some time, it seems desirable to change the routine, including perhaps a new bedroom, a warm bath, a cup of warm milk or some other warm drink, and perhaps the plugging of the ears with cotton wool.

Dr. Symonds recommends particularly the repetition by heart of some verses which have a lulling influence, the one which he chooses being Keats' Ode to Sleep. Sleep cannot occur when the muscles are tense, so that it is desirable to learn to relax the muscles. Persons may be taught to relax limb by limb, muscle by muscle, until the whole body lies absolutely passive.

There are cases of sleeplessness that result from actual disease of the nervous tissue regulating relaxation. Furthermore, disturbances of the emotions, such as worry, may actually prevent purposeful attempts at rest. In such instances sedative preparations may be prescribed by a physician, which will successfully prevent disturbances of the emotions and the constant passing of thoughts. There now exist many non-habit forming preparations which may be prescribed to advantage. At the same time, the patient's habits may be gradually modified, his mental condition studied and the cause of his emotional disturbance removed. M. F.

TYPHOID CARRIERS

"Typhoid Marys," or carriers of typhoid fever germs, have been found, in a recent study in Alabama, to be more numerous than we had supposed. Dr. S. W. Welch of Montgomery surveyed 819 persons engaged in the dairy business in that state; 55 (6.6 per cent.) were found to be typhoid carriers. However, these persons were not always capable of transmitting the disease to others.

A new method of examining was followed in which a culture medium was employed which

proved to be especially favorable to the growth of these germs. The body discharges were examined promptly after their elimination from the body, and from two to four separate examinations were made of each person. This was done because it has been learned that the evacuations of such carriers do not contain bacilli at all times.

Carriers were found who had been connected for some years with a dairy, to the milk from which not a single case of typhoid or paratyphoid fever could be traced. Such carriers acquired habits of such extreme cleanliness and care that they avoided infecting the food materials they handled.

Nevertheless, with the limitations of our present knowledge about these matters, the only sure protection to the community is to divorce typhoid carriers completely and permanently from any occupation which involves the handling of food distributed to others. A board of health which fails to do this is derelict in its duty to the community.

Boards of health should and usually do strive to minimize the hardship to the typhoid carrier by treating as confidential the discovery of his being a carrier until he has had time to dispose of his business and to make sure of a livelihood in some other occupation. In spite of every effort to aid him, a radical change in occupation and business relations of necessity involves loss and hardship, often quite severe. Efforts have been made to secure legislation to indemnify typhoid carriers for their losses.

The Minnesota state board of health has endeavored to have such laws passed in that state. The bills for that purpose drawn by the board have not been enacted into laws, but last winter an appropriation of $6,000 was secured to be used by the board at its discretion in mitigating the hardships devolving upon any carrier who is compelled to give up his occupation and to refrain from any work involving the handling of food.

The farmer is indemnified in many states for the loss of cattle found to be tuberculous and therefore slaughtered. In the case of some other diseases in cattle and other animals, such indemnity has been provided. Opinions differ as to the justice and wisdom of such action. There is much force in the argument that every purchaser of cattle should guard his own herd by making sure that he buys none except healthy animals. *Caveat emptor*—let the buyer beware. It is urged, moreover, that provision of indemnity for diseased cattle which are condemned to slaughter offers a temptation to the cattle owner to infect his own herd deliberately.

No such arguments can apply to the human being who is forced to sacrifice his business because he has by chance become a carrier of typhoid fever or any other communicable disease. He has become such through no fault of his own, and is wholly unconscious of the fact that he is a carrier and, therefore, a menace to others.

It seems logical and just and to the best interests of the public that, when a disease carrier is compelled to give up his job as a handler of milk or other food, his loss should be shared by the community in whose interest such drastic action is taken.

J. M. D.

THE BALTIMORE HEALTH PAGEANT

"CHILDHOOD is the golden period of life in which to teach health." Thus did Baltimore join the legion of health and open her stadium to a pageant of health education and happiness given by her school children.

The story of "The Triumph" (the pageant given) takes place in the land of Eromitlab in which health and happiness abound the year round. It is the recess hour and the children gather on the playground, giving free expression to the spirit of happiness within their hearts by playing and dancing on the green, for it is spring. One of the children discovers a magic ring which, when worn by a mortal, summons back to earth Hygeia, the goddess of health. Hygeia calls her health fairies who break the silver threads that Time has thrown in an entangling network over her throne. Thus the goddess of health is restored to power. The children are soon won over by the enchanting health fairies and go hand in hand with their new friends.

The city of Baltimore is farsighted in teaching children that education and happiness are attendants of health.

To keep my health—to do my work—to live:
To see to it that I grow—and gain—and give.

J. P.

The Way They Stand in Healthyland

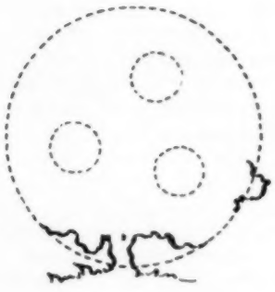
BY JOHN T. LEMOS

A Healthyland Elf just told me that the straighter you stand the healthier you will be. Sitting and standing up straight makes you grow taller and look better, too. Don't forget to sketch these pictures with your crayons.

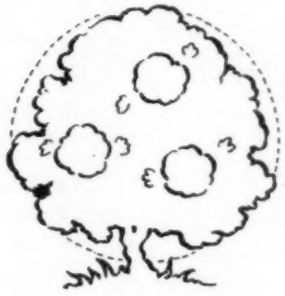
I like to go
To Healthy Town,
Because since being
There, I've found

That all the folks
In that fine place
Are trained to act
With ease and grace.

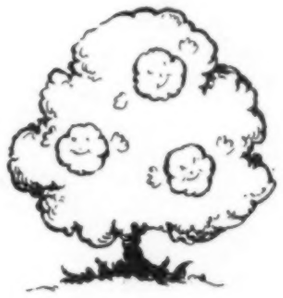
The flowers by
The garden wall
Bloom out in clusters
Straight and tall.



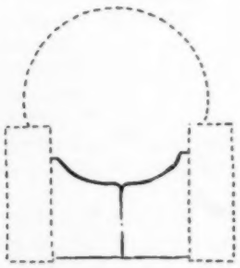
And fine old trees
On hills near by
Grow firm and tall
Up toward the sky.



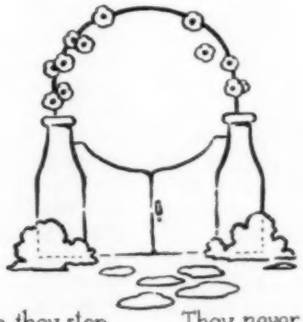
The little hedges
By the gate,
All do their best
To stand up straight.



And all the shrubs
That you pass by
Seem trying hard
To grow up high.



But best of all
In Healthy Town,
Are boys and girls
You see around.



For when they stop
To talk to you,
They stand like soldiers
Straight and true.

They never slouch
Down at their desk,
But sit up straight
And look their best.

So if you'd go
Through Healthy Gate,
Be sure to stand up
Firm and straight.

BOOK REVIEWS

FEEDING, DIET AND THE GENERAL CARE OF CHILDREN. By Albert J. Bell, assistant professor of pediatrics, University of Cincinnati and pediatrician to the Cincinnati General Hospital. New revised edition. Cloth. Pp. 290. F. A. Davis Co., Philadelphia. 1924.

THE book is designed as a guide for mothers and nurses. While one does not question its facts, one does wonder if there are not already too many books of this type on the market. The information given both as to infant feeding and as to all of the diseases that may possibly affect children is just sufficient to confuse the average mother while barely complete enough to be of service to the nurse who is more than superficially interested in the problem.

It will probably be of more danger than benefit to most mothers. It is true that infant mortality during the last decade has been reduced largely by education of the parents. But this education has been to place the feeding of the infant under skilled supervision. Sorrow and disaster often result when the mother attempts to feed her infant according to the formulae contained in a book, and according to the generalized advice of a man who has never seen her baby. While such a procedure may be successful with a certain number of children, it is only a question of time until one meets with misfortune.

J. R. G.

BIOLOGY AND HUMAN LIFE. By Benjamin C. Gruenberg. First Edition. Cloth. Pp. 592. With 243 illustrations. Ginn & Company, New York. 1925.

AMONG the crowd of new biology textbooks that have appeared within the last few years, this book by Benjamin C. Gruenberg holds a conspicuous place. It carries out in eminent degree the tendency to adapt school work to the practical needs of daily life.

Although every chapter centers on something biologic, the old line teachers of biology will be at a loss to understand why such a book is called biology. More than half its pages are devoted directly to human health—what it is, how to maintain it, and how to regain it when it is lost; this is not to the detriment of the book but quite unusual in a volume under this title. In the remaining pages, frequent slants in the same direction evince the prevailing practical trend.

Part I, "Getting Acquainted with Life," flits about over the whole field of living things, dipping down to sample a blossom here or to rest on a salient stem there, in a way as confusing to a logical mind as is the course of a butterfly. The principles discussed are cardinal points in biology. The illustrative data are striking and sketched with a free hand, indicating able scholarship. The treatment of each topic, however, is commonly so compact as to be comprehensible only to a reader already somewhat familiar with the material. The pupil near the beginning of a high school course will need a great deal of help to understand the text.

The author cites examples generously to illustrate his principles, examples which in his mind give concreteness to the general statements, but unfortunately the citations are to nine tenths of the pupils strange words which mean nothing. In a similar category are the frequent allusions to things which are not explained and are not known to young readers, a practice very baffling to one who is struggling to grasp a new thought.

Part II, the main part of the book, is called "The Biology of Health." It is an attractive discussion of the main functions of the body, with frequent sidelights on the physiologic activities of other animals and of plants. The discussion of habits, emotions, and keeping fit is especially good. Practical suggestions are numerous and well chosen, although some things of questionable advisability for a layman to use are recommended, such as the application of styptics and the tourniquet. The hundred pages about diseases, their causes, control, and prevention are clear and impressive.

The third part of the book treats of useful animals and plants. The most valuable portion of it discusses reproduction and the improvement of breeds. Reproduction among the lower forms is treated with clearness of detail, but the reproductive processes of the higher animals is left so indefinite as to mean little.

The book is full of valuable material for a teacher and his pupils. The list of reference books at the end of each chapter is not too ponderous and is well chosen. The problems are thought-provoking. It is pretty stiff for a ninth grade class. There is an unnecessary number of technical terms. However, the book is a leader among the volumes which are guiding biology teachers into more practical and valuable work with their classes.

R. E. B.

THE CARE, CURE AND EDUCATION OF THE CRIPPLED CHILD. By Henry Edward Abt, director, Bureau of information of the International Society for Crippled Children. Cloth. Pp. 222. Illustrations. Price $3.50. The International Society for Crippled Children. 1924.

FEW of us cry because we lack wings; our lives are peopled with persons similarly afflicted. But if one of us inhabited a world where he alone was wingless he must feel himself an inferior, cheated by destiny.

In the same spirit, Mr. Abt pictures the crippled child unhappy among his sound brothers and sisters and advocates his care in an institution where his playmates are like himself and where orthopedic surgeons try to restore his limbs. The traditional picture of the deformed body bearing about a warped mind must give way to that drawn by James Whitcomb Riley in his poem "The Happy Little Cripple," with which this book begins. Happy surroundings and training for self support, given by specially prepared teachers, will do for the child's mental restoration what the surgeon does for his physical rehabilitation.

Mr. Abt surveys the crippled child as found in history and literature, and has compiled a useful directory of the institutions in each state which care for these underprivileged children. The last includes orthopedic hospitals, convalescent homes and training schools. He also traces the enlistment of national and international societies in behalf of these children, warning that well-meant relief measures must also be well planned, coordinated with similar efforts, and directed by skilled physicians.

F. D. J.

HEALTH NEWS AND VIEWS

"SIX MONTHS LAW" HAS GOOD RESULTS

Decreased infant mortality, fewer commercial agencies profiting from the unfortunate situation of unmarried mothers, fewer abandoned babies—these were found by the Children's Bureau to be some of the results of the Maryland law forbidding, except under special conditions, the separation of mother and baby for the difficult first six months of the baby's life.

Maryland's so-called "six months law" attracted wide attention when passed by the state assembly in 1916. By 1921 sufficient time had elapsed to make a study of results possible. The Children's Bureau undertook this study in Baltimore, concentrating most of the investigation on the welfare of illegitimate babies, most likely to be affected by the law. Miss Rena Rosenberg and Miss A. Madorah Donahue wrote the report, recently published.

Most striking was the enormous saving in baby lives apparently due to the law. In 1915 one out of every three babies of unmarried mothers died during the first year of life, and one out of every four, during the first six months. In 1921, only one out of every eight died during the first year, and only one in every twelve during the first six months. The reduction in infant mortality was more than 50 per cent. During the same period the rate for infants of legitimate birth was reduced less than 20 per cent. In 1915 illegitimate babies died at a rate three times as high as the rate for infants born in wedlock in 1921 at a rate only one and a half times as high.

The decrease in mortality from gastric and intestinal diseases among the illegitimate babies was great, particularly during the early months of the first year. This, the bureau believes, may be the result of the increase in breast feeding made possible because the mothers and babies were kept together.

BIRTH RATES HIGHER, DEATH RATES LOWER IN 1924

Birth rates for 1924 were higher than for the previous year in sixteen of the twenty-five states in the registration area, according to department of commerce figures recently announced.

Rural districts of North Carolina had the highest birth rate (31.9 per 1,000 population) and rural districts of Montana had the lowest birth rates.

Death rates were lower in 1924 than in the previous year in twenty-three of the twenty-nine states shown on the department of commerce tables. Record low rates appear for the following states: Connecticut, Delaware, Kansas, Kentucky, Maine, Massachusetts, Montana, Nebraska, Ohio, Pennsylvania, Vermont, Virginia and Wisconsin.

The six states having higher rates for 1924 than for 1923 are California, Florida, Mississippi, Oregon, South Carolina and Washington.

The highest 1924 death rate (22.1 per 1,000 population) was in the urban districts of Mississippi and the lowest (9.5) for the rural districts of Montana.

Only three states showed higher infant mortality rates for 1924 than for 1923. The greatest number of infant deaths occurred in the urban districts of South Carolina and the lowest number in the rural districts of Nebraska.

The highest infant mortality rate for 1924 in the forty-four cities of 100,000 or more population was for Trenton and the lowest was for Seattle.

LEARNING TO RIDE HORSEBACK

Use good horse sense when you take up horseback riding and don't attempt too much at first, advises Dr. William Warren Townsend of Burlington, Vt. Dr. Townsend is an enthusiastic horseman and advises many of his patients to ride.

"Be examined by your physician to determine if you are suffering from any physical defect that would be made worse by riding," says the doctor. "There are very few such conditions in either men or women, but it is well to know of them.

"After determining whether you are fit for riding, seek the advice of one who rides well as to what to do and how to do it. If you are located near a riding school and can afford instruction, by all means place yourself in the hands of the instructor. If he is a competent and intelligent one he will make a riding enthusiast of you."

A "cold blooded" horse is the best for a beginner, according to Dr. Townsend. By this is meant a horse with little thoroughbred blood, as thoroughbreds are "hot" and a beginner irritates their mouths, and their ordinarily sweet temperament becomes ruffled.

Having been instructed in the proper manner to mount, one should ride only at a walk for days and weeks, if necessary, until balance, and lightness of hand are secured and the muscles get supple and the skin hardened. The faster gaits, trotting and cantering, are attractive, but novice riding should be snail-like if an enthusiastic rider is to be developed, Dr. Townsend believes.

MUST HAVE HEALTH CERTIFICATE TO ENTER SCHOOL

Hood River County, Oregon, is trying out a new school health regulation. Any child entering school in that county from any other county or state must have a certificate that he is free from communicable disease.

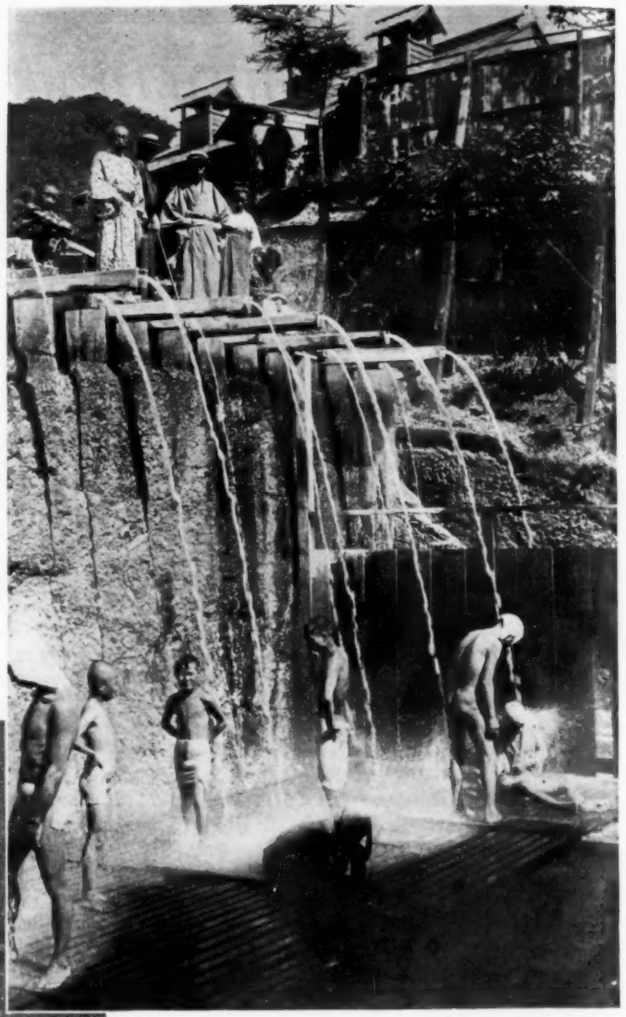
Inspection is first made by the county nurses and if there is evidence of communicable disease the child is referred to the county health officer or family physician for examination.

"In this way, we think that we can cope with some of the serious problems which come to us with the berry and apple seasons," writes Miss Whitteker, county public health nurse.

MOVIE CHILDREN ARE PROTECTED

Baby movie stars are frowned upon in Germany, where a recent police order forbade the employment of children under 3 in Berlin moving picture studios, according to the International Labor Office.

A police permit is required for the employment of all children between 3 and the school-leaving age. This permit is given on condition that children are not exposed to conditions injurious to health or morals, or to unhealthy excitement of the imagination. Children attending school may be employed only outside of school hours.



JAPANESE HOT SHOWER

This Japanese village has something unique in a hot shower bath open to the public. The permanent hot shower is made by diverting water from a hot spring through troughs to a steep embankment.

TO SEA IN A BOWL

Three wise men from Gotham went to sea in a bowl, but not for any such reasons as these Japanese. This sea-going tub is manned by lepers.

WASH DAY ON LAKE COMO

Travelers in Italy always find amusement and instruction in the public laundry. Here the housewives of Como are doing the family washing and drying it in the bright Italian sunshine.

Photos by Ewing Galloway

A FORCE IN PUBLIC SANITATION

Los Angeles Boy Scouts have a great deal of civic pride. Here they may be seen with some of the waste, such as glass and nails, that they have removed from the streets as a cleanliness measure and for the purpose of preventing auto tire punctures. The Scouts are equally enthusiastic in urging citizens to clean up their private premises.

TEMPLE TO CLEANLINESS

To the right is a view of New York City's municipal bathhouse. Its use is free and it is widely patronized.

THE HOME OF THOUSANDS

This block of tenements, one of the dirtiest and most crowded in all the Lower East Side, New York, houses thousands of persons. Filth breeds disease, both physical and moral.

Photos by Ewing Galloway

ONE WAY OF KEEPING COOL

These two city misses started out to water their plots in the children's garden in New York Park. They decided they could use the sprinkler to quite as good advantage on themselves.

DOBBIN GETS COOLED OFF

The intense heat of early June affected horses as well as men. A kind Chicago fireman has taken pity on this horse and is giving him a shower with a hose.

PLAYGROUND SPRINKLERS

Chicago children who live far from the lake are not without a system of refrigeration. Sprinklers in the various playgrounds keep down their body temperatures on hot days.

Photos by Pacific & Atlantic

DETROIT REVISES QUARANTINE RULES FOR SCARLET FEVER PATIENTS

New knowledge and larger experience with communicable disease has led to a considerable shortening of the period of isolation of scarlet fever patients.

Until recently the scales of epidermis from the peeling skin were regarded as infectious and patients were not thought safe to mingle with others until all signs of such desquamation had ceased. As the skin on some parts of the body, especially between the fingers and toes, continues to peel off in occasional cases for three or four months, or even longer, the quarantine is very irksome. It is now fairly well established that these scales are not a source of contagion.

Contagion may be conveyed by the discharge from some secondary focus of infection, such as the ear, the nose, the mastoid process, or some broken-down gland. Such complications of scarlet fever occasionally develop some days after symptoms of the original disease have subsided and to guard against the possibility of infection from such a source, patients whose recovery from scarlet fever seemed complete have been held in quarantine for a long period.

The health department of Detroit has held such patients in the hospital for fifty-six days and, when they were ill in their homes, isolation has been enforced for forty-two days, unless the complications cleared up in the interval.

A study of scarlet fever cases, with complications, occurring in that city during the past fifteen months shows that secondary cases, developing from these complications, were considerably more numerous when the patients were held in hospital for fifty-six days than when they were held in their homes for forty-two days. It was least in the group isolated in their homes for the period of twenty-eight to forty-two days.

On the basis of this experience the Detroit health department has amended its regulations. All cases of scarlet fever, whether at home or in hospital, with complications such as running ears, noses and sinuses will be held in strict quarantine for thirty-five days. At the end of this period of time, providing the condition of the patient warrants it, the strict quarantine will be lifted and a warning sign substituted. The warning sign will apply only to the patient and will remain up until fifty-six days from the date of original quarantine unless, of course, the complication clears up in the meantime.

The period of isolation or quarantine for any patient afflicted with a contagious disease should always be sufficiently long to prevent conveyance of the disease to others and in case of doubt should lean to the side of safety. On the other hand, it should not be longer than is essential to give reasonable assurance of safety.

To prolong this irksome quarantine unduly is to inflict an unreasonable hardship on the patient and often on the family; it tends to provoke disrespect for and disregard of the law. The period of quarantine for scarlet fever as now prescribed in Detroit is in accord with the opinion of those observers who have had the largest experience with this disease.

IF THERE IS TUBERCULOSIS IN THE HOME

Here is some advice given by the Maryland state department of health to persons who have tuberculosis patients in their households:

1. Young children should not be allowed to play in the sickroom of members of the household having any disease of the lungs. Playing on the floor of the sickroom, especially, should be absolutely forbidden.

2. Patients with tuberculosis should not kiss any one on the mouth.

3. Towels, pipes, clothing, handkerchiefs and other personal articles used by a person suffering from tuberculosis should not be used in common with other members of the family.

4. When consumptives are bedridden, their clothing and bedding ought not be thrown into the common receptacle for soiled clothes. Such things as can be boiled should be boiled as soon as possible, or else soaked for several hours in a disinfecting solution.

5. The patient should have his own bed, and if possible, his own room. It is particularly injurious to have any one occupy the same bed.

6. The bedroom should not be used as a dining room or kitchen, if it is possible to avoid it.

7. The cardinal principles to be observed in the sickroom are cleanliness, sunlight, fresh air, and care of the sputum.

ENGINEERS OFTEN TO BLAME FOR MOSQUITO NUISANCES

Storm water catch basins, found by the hundreds in many cities and towns, are ideal breeding places for mosquitoes, the agents of transmission of malaria and other diseases, says J. A. LePrince, chairman of the committee on engineering of the National Malaria Committee, in a recent report to the American Public Health Association.

Sewage polluted water breeds 1,000 mosquitoes to one bred in clear water, says Mr. LePrince. Great danger lies in sluggish water carriers in town suburbs; in culverts and catch basins which do not drain promptly and completely after a storm, and in the location and conduct of municipal swimming pools and auto tourist camps. Thought should be given to their possibilities as breeding places of disease-transmitting mosquitoes.

Cooperation of national and state engineering associations should be obtained and by them a practical plan devised to prevent the construction of roadside ditches and borrow-pits in such manner as to be foci for the breeding of mosquitoes.

Most practicing engineeers and others who plan and construct drainage and sewage disposal conduits have not been taught what a serious problem malaria is. The engineer can build malaria into or out of a community for all time to come. Every citizen of a community located in a malarial zone should be on the alert to detect malaria breeding spots due to faulty construction of the sewage or drainage system. He should report them to the health officer and insist on their correction.

Numerous demonstrations in the southern states and in other parts of the world have proved that malaria can be eliminated from almost any community.

WARNS BUYERS AGAINST HOUSES NOT MADE PROOF AGAINST WHITE ANTS

A warning against houses not made proof against termites or white ants in regions where these pests abound has been issued to prospective home buyers by the U. S. Bureau of Entomology.

Wherever these pests can get at wood that has not been creosoted or otherwise made termite-proof they will ruin it in a short time. All untreated wooden parts of houses should be carefully kept away from contact with the earth, the bureau declares. Buyers should be especially watchful to see that this is done in houses which they purchase and municipal building regulations should include rules to cover this point.

QUESTIONS AND ANSWERS

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a two-cent stamp. If the question is of general interest, the answer will be published; otherwise it will be sent by mail. Questions are submitted to recognized authorities in the several branches of medicine and answers framed by them. The names of correspondents will not be published. Diagnoses in individual cases will not be attempted nor treatment prescribed. Answers to questions relating to beauty will be found in the "Healthful Beauty" department of this magazine.

White Patches on Skin

To the Editor:—I wonder if you can give me any idea as to what are the peculiar light spots which my 16 year old sister has on her body, arms, face and neck. The first (about the size of a dime) appeared about one and a half years ago on her neck. They are almost white and some of them are quite large. We have taken her to three physicians and all of them say they do not know what these spots are or what causes them. The last physician has given her a tonic. He says she has goiter and that he is looking up her case. She is not very strong, but is seldom ill.

M. G. T., District of Columbia.

Answer.—It is probable that the white patches are due to what is known as vitiligo, a condition of abnormal whiteness appearing in patches of various size. Where it is present from birth it is known as leukoderma.

These spots are usually round or oval, with a darker area around them, and they show a tendency to grow larger. The cause is not known.

Treatment by various means has proved of little value, although sometimes the pigment around the margins can be partly removed by certain applications and the white spots can be stained.

Twitching of the Eyes

To the Editor:—I should like to know what causes some nerve near my eyes to quiver continually. I notice it when I am reading or when I have my eyes closed and it bothers me so much. I am 24 years old. I have read that the back part of the brain concerns the eyes and have often wondered if a dent in my skull on top of my head near the back could possibly cause this. My eyesight is excellent and from outward appearances, there is nothing wrong.

C. B., Kansas.

Answer.—What the questioner probably refers to is a muscle or very small part of a muscle that occasionally twitches for a few seconds. This phenomenon is fairly common, and while the sensation it gives is very definite the actual movement is so slight that very close observation is needed to detect it. It is commonest along the lower eyelid.

The usual cause is fatigue. This may be local through eyestrain. Even though a person's sight is excellent, he may be straining his eyes in some way. Reading in bed, for instance, with the book held too low is a frequent factor. Eyes that need glasses, of course, may be responsible. The same twitching may be the result of a generalized fatigue or run-down condition.

However, there may be something locally wrong, which would only be discovered by an ophthalmologist.

It sometimes happens that trouble near the nucleus, or cells of origin, of the facial nerve causes twitchings. These cells lie in the brain but are low down and far from the part that is concerned with consciousness. These twitchings are more severe and usually are accompanied by various other local troubles.

The "back part of the brain" or, to be exact, the occipital lobes are concerned with sight but not with any muscles which move the eye or lie outside it.

The trouble in this particular case is probably the common one first mentioned, which has little if any importance except as an indication of strain. However, only by an examination can one be sure, so we advise a consultation with an ophthalmologist.

X-Ray Treatments

To the Editor:—Please discuss in your columns the use of x-rays for the treatment of diseased glands of the neck and diseased tonsils. When is x-ray treatment of the tonsils preferable to surgery?

H. B., Colorado.

Answer.—For fifteen years or more, x-rays have been used extensively for treatment of tuberculous glands, as well as of those which are the seat of simple infection or which are a part of such general diseases as leukemia. The basis for the treatment is the special sensitiveness of lymphatic structures to the rays and the fact that mild stimulation of chronic tuberculous disease in the glands hastens the process of natural walling off of the diseased foci and ultimately completes healing.

On account of the tendency after surgical removal of certain affected glands for a recurrence of the disease in those glands adjacent, the x-ray has come to be frequently used as a substitute for operation. It is useful not only in the glands that have broken down and are suppurating but also in the non-suppurating cases. In general, the dosage is of moderate intensity and given through filters. The results are rather slow but on the whole very encouraging.

In very recent years, there has been a rather widespread attempt to substitute x-ray treatment for surgical removal of tonsils. It is the consensus of opinion among x-ray workers that the results have fallen short of expectations.

In unselected cases, the net results are probably not more than 50 per cent. of what would be desired. There would be a considerable advantage in the x-ray method because of its favorable action on lymphatic tissue outside the tonsil if the success was more uniform. The objections to its use lie mainly in the duration of time before a result is obtained and in the fact that certain patients suffer intense dryness of the mouth as the result of covering the lower salivary glands.

In the best practice today the x-ray is used to treat the tonsils of selected cases, particularly where some other organic lesion makes a tonsil operation an unreasonable risk.

Eczema of the Scalp

To the Editor:—Is there a cure for eczema of the scalp in its early stages? A young woman 32 years old has this trouble; she also is bothered with dandruff.

L. C. G., Pennsylvania.

Answer.—This meager description of the young woman's condition leads one to suppose that the disorder is what is known as seborrheic dermatitis rather than eczema.

If water blisters and weeping are present, only the most soothing preparations should be applied. If not, preparations containing such drugs as sulphur, salicylic

acid, resorcin or ammoniated mercury are of value. Any one of these, however, may irritate the scalp when not indicated by the condition at the time of application and should never be used except on the advice and under the direction of a competent physician, preferably one who has had a large experience with diseases of the skin.

Tear Ducts

To the Editor:—I am a peculiar case. I have been examined by two optometrists and one physician and they say that my sight is normal. The trouble is that my left eye waters almost continually at times. I have been like this for almost a year. I have tried different lotions prescribed by these men. Finally, one of them tells me that the tear ducts, or valves, are blocked. He says an operation will be necessary. Will you please advise me concerning this matter? Over a year ago I bought some cigarets that are supposed to relieve catarrh. I tried three or four packages of them. One is supposed to inhale the smoke and force it up into the head. Do you think this could have caused the clogging up of the tear ducts?

A. P. R., Massachusetts.

Answer.—The overflow of tears onto the cheek is usually due to an obstruction in the so-called lacrimal or tear ducts, which normally convey the tears from the inner corner of the eye down into the nose.

It is possible, though improbable, that the catarrh cigarets that you used might have set up an inflammation in this duct, which resulted in the difficulty.

Probably you were rightly advised as to the need of simple operation. This consists in passing a probe from the inner opening of the duct, at the inner corner of the eye, down through the duct into the nose. It may have to be repeated several times.

Granulated Eyelids

To the Editor:—I'm writing you about soreness of the eyelids, a kind of granulation. Please tell me the causes and something that would help in the prevention of this condition. Would such soreness weaken the eyes and sight? Also, would burning of the eyes be caused from it?

B. D., Ohio.

Answer.—Granulated eyelids are due to inflammation of the follicles in the mucous membrane lining of the lids. Among the more severe types is that known as trachoma, which may pass from one person to another. When such granulations are persistent and severe they may damage the eye in such a way as to impair the sight.

If the inquirer's own physician is unable to advise a treatment that will relieve the difficulty, he should be asked to recommend some doctor who gives his attention exclusively to diseases of the eye. Any one with granulations of the lids should certainly have the benefit of the best advice he can obtain.

Increasing Height

To the Editor:—It is my desire to grow tall. Is there any thing, a treatment, drugs, or medicine, that you could recommend for increasing height? I am suffering mentally because of my present condition. Some persons call me cruel names. I am afraid of my own self—of being nothing but a runt, as they call me. Can you help me in any way? I would do any thing to increase my height. There seems to be a remedy for everything else.

M. M., Wisconsin.

Answer.—We wish very much we might recommend some plan for increasing height that would accomplish what this person is seeking, but there is no such plan.

We would call attention to the prize essays on "The Worst Health Fraud I ever Fell For" in the June, 1925, issue of HYGEIA. Among these is one from an individual who was distressed over her short stature and "fell" for one of the devices advertised to cure this condition. It was an utter failure, and after a year and a half of torture and exercise, she gave it up.

The only way for one who is very short in stature to be happy is to forget about his size and to remember that some of the ablest men in history in all lines have been of a size below the average. A small frame trained to be under thorough control can be used just as effectively by a good mind as can a large body.

In regard to the amount of energy that is required to keep up a large body in contrast to a small body, the advantage is always with the small one.

Broken Finger Nails

To the Editor:—My finger nails have vertical ridges on them, and are so soft that they tear down to the quick on the slightest provocation. They turn outward as soon as they attain any length at all, and they have many tiny cracks on them at the upper end. What causes this condition? What will cure it?

B. D., Louisiana.

Answer.—The description given is not detailed enough to permit an accurate diagnosis. Disturbances of the nails may arise from a number of causes, such as inflammation of the tissues that produce the nail, infection of the nail structures with fungi, congenital defects, and various systemic disturbances of health. The data given suggest either or both of the latter conditions as possible explanations.

A thorough general physical examination should be taken with special attention given to the circulatory, respiratory, and ductless-glands findings. In the meantime some benefit might result from a nightly massage of the tissues about the nails with an ointment of mercury, which should be prescribed by a physician in order that it may be of the right kind and strength.

Baby's Weight

To the Editor:—A child 9 months old weighs only 8 pounds, the same weight as when born. Its highest weight has been 12 pounds. It is not sick and has never been sick. What do you think is the cause and what is the remedy?

M. J. R., District of Columbia.

Answer.—A child 9 months old weighing the same as at birth is in a serious condition even if it has never been apparently ill. The best thing to do is to take the child to a physician or hospital for infants without further delay, so that the underlying cause may be determined and the proper treatment instituted. It is barely possible that the child has never received a sufficient amount of proper kind of food; more likely there is some systemic ailment or handicap. Heart murmurs, blood diseases, extreme anemia, chronic bladder infections, tuberculosis and various other conditions may keep an infant's weight stationary for nine months. In all events it is absolutely necessary that the child receive a thorough examination as soon as possible.

Safe Milk

To the Editor:—What bacteriological count in milk makes it unsafe for human consumption? Does an excessively high count indicate harmful bacteria?

R. F. P., Texas.

Answer.—The bacteriologic count in milk is a useful aid in the control of milk supplies. This count should be made according to a rather rigid standard procedure. The actual number of colonies appearing on an agar plate is subject to some variation but fundamentally it depends upon three factors: the initial

contamination of the milk, the age of the milk and the temperature at which it has been kept.

A high count, therefore, does not necessarily mean that the milk is unsafe for human consumption but it does mean that the product has been abused, i. e., it is dirty or old or not properly cooled. Unsatisfactory conditions in the dairy or in transit from cow to consumer increase the probability of the entrance of disease germs into the milk.

There is no count above which we can definitely state that the milk is unsafe to drink but in order to control conditions surrounding production many cities limit the number of bacteria which may be present. This number is higher in large cities than in small ones because of the greater time which must elapse between dairy and consumer. It is also usually higher for raw than for pasteurized milk. Local conditions must determine the limiting bacterial count.

On the other hand, a low bacterial count in a raw milk does not necessarily guarantee freedom from disease germs. There are a number of instances of this on record notably that of the septic sore throat epidemic in Boston in 1911.

In spite of the difficulties involved in the interpretation of the results of bacterial counts in milk, they form a necessary part of the work of a laboratory, either public or private, which is concerned with the control of milk supplies or the control of the process of pasteurization.

Vision

To the Editor:—I have worn glasses ever since I was 8 years old. I am now 25 and have had no less than eight pairs of glasses in that time, only two pairs of which really did me any good. I have had no satisfaction since I was twelve. Every oculist I go to tells me that I have astigmatism. I can read small type better without glasses than with them but my eyes soon tire. My distant vision is good when out in the open, i. e., when examining the landscape, but when it comes to reading car cards or reading the blackboard from the rear of the schoolroom I am lost. Astigmatic lenses help me in reading distant print but they absolutely ruin my newspaper reading and the reading of music by blurring my vision. Now isn't there any lenses made that will improve both my near and distant views? I find that my astigmatic lenses can be turned to improve near views but at the same time distance is blurred, and vice versa. My eye troubles were supposed to have been caused by my having diphtheria and scarlet fever at the age of seven. Any suggestions you have to offer will be eagerly followed.

W. McC., Jr., Pennsylvania.

Answer.—It is not an uncommon experience, though usually in persons older than the questioner, for one to need two pairs of glasses, one for near and one for far vision. That would seem to be the solution of his problem. Such glasses are now made, in which a small circle for near vision is inserted in the lower portion of the lens for distant vision. When one looks down through such glasses he uses the smaller, near vision lenses, and when looking far away uses the upper portion of the glass.

Needless to say, all lenses in such a case as the one described should be prescribed by a competent oculist, who has made a thorough examination of the vision, dilating the pupils for that purpose.

Bran in Arthritis

To the Editor:—I am troubled with arthritis of the knee. Is bran permissible in my diet? Does it contain much carbohydrate? Will you please tell me its composition? M. G., Colorado.

Answer.—There is probably no reason why bran cannot be eaten by one suffering from arthritis but there might be conditions of the digestive tract present that would contra-indicate its use.

Bran contains a small amount of digestible carbohydrate but is mostly composed of indigestible cellulose and is helpful in constipation because of this so-called roughage, or indigestible residue, which stimulates action of the bowels. To a good many persons it is irritating, especially to the large bowel.

Knock-Knee

To the Editor:—Can you tell me how to overcome knock-knee? Has it any thing to do with a person's health? Do dancing and swimming overcome it? M. B., Maryland.

Answer.—Knock-knee can be overcome at any age, but requires rather stern measures for its correction.

In children up to five or six years of age it may be corrected by a series of plaster casts or braces applied and controlled by an expert. Or, better, it can be corrected by osteoclasis, i. e., breaking the femurs by a mechanical contrivance (with the child under an anesthetic) and immediate correction in an apparatus of plaster of Paris or other material.

In older children and adults the femur must be cut with a chisel just above the knee and then after correction held in position by apparatus until healing takes place, a matter of six weeks to three months.

Knock-knee is commonly due to rickets and in itself is no menace to health. Exercises have little if any thing to do with correcting the deformity.

Craving for Gritty Substances

To the Editor:—For the past four years I have been conscious of a craving for gritty substances to grind between my teeth. At first it was only at intervals that I noticed this craving. But it seems to grow stronger and more frequent all of the time. I began by chewing the erasers on my pencil and grinding the grit in the rubber between my teeth. I teach school, am married since last June and am 26 years of age. I have explained this condition to my physician and he had me tested for hookworm by health authorities in New Orleans, but the results were negative. I have never been of a nervous temperament and do not think this is merely a habit because the presence of grit between the teeth is very unpleasant to any normal person. My health is very good. I weigh 128 pounds, and am 5 feet 4 inches tall. If you can help me to locate the trouble I shall certainly appreciate it for not only is this a very annoying habit, but I have worn my teeth down so that they have become very uneven and sharp edged. J. F., Louisiana.

Answer.—Pica, or the craving of substances usually inedible, such as chalk, clay, etc., is a symptom found in many conditions. It is associated with disorders of the blood as in that type of anemia known as chlorosis; it is sometimes found in gastro-intestinal disturbances, such as chronic inflammatory states or enteritis; and occasionally is associated with intestinal parasites. At times it may be found in conditions of incomplete development of the intellect or in mental deterioration. Frequently it is seen in states of nervous instability not related to mental enfeeblement or gross mental disease.

In the particular case cited, it would appear from the rather meager description that the craving is for the sensation of grinding and not for any particular substance. This may be more properly classified as a tic, a condition which although voluntary is not an ordinary habit.

A tic is a voluntary, usually unconscious, purposeful movement, performed for the relief of some sense of discomfort. If the impulse to "tic" is resisted a distinct sense of discomfort ensues.

For example, if following some actual irritation of the eyelids wherein a forcible contraction of the lids tends to relieve the itching or burning, a tic develops long after the actual irritation has disappeared, efforts to resist contracting the lids produces a sense of incompleteness or discomfort which is relieved when the tic is indulged. Similarly a defective alignment of the teeth may give rise to a sense of discomfort for which relief is sought in biting or grinding. Following this a tic may easily develop.

The specific case under discussion does not differ widely from the ordinary teeth grinding tics. One need not be of a "nervous temperament" to develop such a tic. It is not, however, due to any organic disease and can be cured by learning to resist the impulse and temporarily suffering the discomfort produced by its nongratification. Just as one can learn not to scratch one's nose when it itches while "on parade" so one can gradually and progressively resist the impulse to grind one's teeth.

Germs in Dishwater

To the Editor:—In the February issue of HYGEIA you have an article stating that a certain percentage of yellow or brown bar soap will kill certain germs in dishwater. Will white ivory soap be just as effective? Also, will the commonly sold powder called "Gold Dust" be as effective in the destruction of germs? The yellow bar soaps seem to injure the hands. How about the effectiveness of palm olive and other hand soaps?

P. L. L., Iowa.

Answer.—Soap may act on bacteria in two ways. In the first place, because of its action on grease, it is a mechanical remover of the bacteria. This is the most important manner in which it affects bacteria. In the second place, it may either hinder the growth of bacteria (antiseptic action) or it may kill them (germicidal or bactericidal action).

Thus, when soap is used as in brushing the teeth or casually washing the hands, it is the mechanical removal only which is of practical value in removing the bacteria. It should also be emphasized that laboratory experiments on the germicidal value of a soap—either as such or in a tooth paste— yield results which have value only when the soap is properly used.

When soap does act as a germicide, however (as was mentioned editorially in HYGEIA for February, 1925), it is necessary that it be in actual contact with the bacteria for a sufficient length of time; it does not kill all the bacteria immediately.

Soaps prepared from tallow, olive oil, cottonseed oil, linseed oil, coconut oil, and resin, or from mixtures of these soap bases, seem to be about equally effective in the destruction of the pneumococcus, the germ which causes pneumonia, the streptococcus, which is associated with infections of the nose, throat, ears, chest and various infectious diseases, and the diphtheria bacillus. This includes practically all commercial soaps. Palm oil soap was not specifically tested, although its composition would indicate that it has the same action as the other soaps. The same statement applies to soap powders.

Gold Dust is a powdered soap of rather strong alkaline reaction and acts in the same way as would a bar soap of similar composition, excepting that being in finely divided form it dissolves in water more quickly.

The concentration of 0.5 per cent. of soap seems to be sufficient for dishwater. Yellow or brown bar soap (containing resin) is almost the only commercial soap which will attain this concentration readily in cold water. If hot water is used, white floating soaps or perfumed toilet soaps will also dissolve to this extent. Moreover, hot water increases the efficiency of all soaps. After washing a dish, it is advisable to rinse it in water, preferably running water.

In order to take advantage of the germicidal properties of soaps in hand-washing, a good stiff lather should be formed, and a nail brush used to reach any organisms beneath the nails. Any commercial soap seems capable of destroying the three organisms mentioned above.

The typhoid bacillus is resistant to all soaps, except those prepared from a base containing a large proportion of coconut oil. Such soaps, with the exception of salt water soap and certain coconut oil shampoo soaps, are not readily available, and might possibly prove to be too irritating to the skin for constant use.

Rattlesnake Bite

To the Editor:—What is the proper first aid to give for rattlesnake bite? Is this treatment the same as for other poisonous reptiles? H. B., Colorado.

Answer.—If the bite is on an extremity, a tourniquet should be applied to the affected arm or leg. The tourniquet should be placed *between* the bite and the trunk, as it is intended to delay or prevent the snake venom from reaching vital centers by way of the blood vessels and the lymphatics. The tourniquet should be tight enough to shut off the circulation in the veins.

The wound should be opened by small crossed incisions (X) and thoroughly washed with a strong deep pink or purple solution of potassium permanganate, the strength of which need not be measured exactly. This solution destroys as much poison as comes in contact with it. The tourniquet should be released for one to two minutes and then tightened again. This procedure should be repeated several times at intervals. This permits the absorption of small amounts of the snake venom at a time, and allows the body to recover somewhat from the poison before more poison is released from the wounded member into the body as a whole.

If a physician can be reached within two hours the release of the tourniquet should be left to him. The patient should be given a stimulant such as coffee or aromatic spirit of ammonia.

Mental Deficiency

To the Editor:—I am one of a family of six children. Of the six of us, three are mentally defective. I have no reason to believe that my parents have not been good, moral folk. On the other hand, my father often gives way to terrible outbursts of temper which always frighten my mother intensely. 1. Could the mental deficiency be caused by these frights (as I believe my mother thinks it has been) or is it more likely to be hereditary syphilis. 2. If it is hereditary syphilis, is it likely that I (born between two very mentally deficient children) am also infected? 3. Can hereditary syphilis be discovered, if present, through blood tests? Can it be cured? 4. If the mental deficiency has been caused by some other venereal disease, would I probably be infected and in danger of infecting my children?

B. A., Illinois.

Answer.—1. The frights could not have been the cause of the mental deficiency, but syphilis might, although there are many other possible causes.

2. If the other children and your parents all have syphilis, then you may possibly have it and transmit it, although the latter is unlikely.

3. Your parents and all their children should have blood tests and a thorough general examination to settle once for all whether there is any syphilis or not. If there is, then there still is a chance for cure.

4. No other venereal disease would have caused the mental deficiency mentioned.

CURRENT HEALTH ITEMS

YOUTH AT THE DANCE

If our more sensationally inclined newspapers were to be fully credited one might fairly believe that the modern high school dance is usually a combination of drunkenness and debauchery, says the *Journal of Social Hygiene* in its April issue.

Probably there are many well-conducted school dances which, like happy marriages, honest employees, and normal dwellers on Main Street, seldom get into the newspapers. It also seems probable, however, that the other type of social gathering has far more examples than it should.

Three of the most important factors making for youthful delinquency, according to the magazine, are: time which is unaccounted for, automobiles which are made available, and too large monetary allowances. All three of these are under the control of parents and it is they who, more than any other one agency, are responsible for the conditions under criticism.

When a dance is over at midnight and Jack doesn't get home until three, some parent or guardian has been derelict in his task of supervision.

When Jack asks to take the car out and Dad fails to learn very definitely where, when, and how the car is to be used, he becomes an accessory to the "orgies" which are exploited in his paper the next day.

When parents give the boy or girl an allowance for spending money, their prime consideration should be that of fairly meeting ordinary needs, and these, for a high school youth, are not usually many or great. A pocket flask doesn't cost much, but it takes considerable money to keep it filled.

Some fathers and mothers attempt to excuse their parental laziness and neglect by the plea that supervision of such items involves a lack of faith in their children. "I can *trust* my boy to do the right thing," is their boast. Their statement may be true, oftentimes, but why is it not better to make it easier for him to justify that trust, by setting up checks and safeguards which will serve to limit temptations?

AMATEURS IN THE GAME

America got into the game during 1924 with 33,051 teams of amateur athletes and 17,492,751 spectators at public sports, the Year Book of the Playground and Recreation Association of America shows.

These statistics, recently issued, cover ten sports—baseball, football, soccer, basketball, volley ball, dodge ball, kitten ball, playground ball, quoits and bowling—as promoted under leadership by public recreation agencies.

The ratio of players to onlookers indicates that public recreation is dealing a telling blow to that national menace which has been dubbed "spectatoritis." More and more Americans are getting their recreation at first hand instead of watching others play.

Municipal golf was provided by ninety-five cities, which maintained 131 public courses. California leads in the number of cities that have put the ancient Scotch game within the reach of all their citizens. Following California's record of nine such cities are Illinois, Michigan and Ohio, each of which report seven such cities.

The municipal vacation is a new development. Eighty-three cities now maintain 123 summer camps, some for boys and girls, some in which entire families may enjoy healthful diversion at a nominal charge. Bathing beaches and other places for water sports were reported by 215 cities and totaled 458. In addition, 272 cities reported 626 public swimming pools.

FINDS COMMUTING AFFECTS HEALTH

For the factory workman to reside in the rural atmosphere of a suburb rather than close to the factory is a modern tendency that seems to have disadvantages to health as well as advantages.

In Heidelberg, Germany, a hygienist has recently completed a study of the health and efficiency of workmen in relation to the distances traveled to and from work. The results of his investigation are told by the Berlin correspondent of *The Journal* of the American Medical Association.

The investigator found that there was a direct relation between the distances traveled and the frequency of accidents and illnesses. Those who traveled the farthest distances were much more susceptible to colds. The duration of sickness also was longer the greater the distance traversed or the expenditure of energy required.

Workmen who were fatigued by long walks or rides to and from work were found to give poorer account of themselves during working hours in the shops than did the workmen residing near at hand. The number of absences was proportionately greater the greater the distance the workman had to traverse.

The hygienist suggests that with improved modes of transportation, much fatigue, accident and illness might be cut down.

PLAY FOR PARENTS

Are you content to take your fresh air and exercise in an automobile or in a rocking chair on the front porch?

This is the question asked of adults by Miss Florence A. Somers, assistant state supervisor of physical education in Massachusetts, in an interesting article on "What Can You Play?" published in *The Commonhealth.*

Miss Somers suggests golf and tennis as excellent games for those who have the opportunity to play them, but because fathers or mothers cannot indulge in these sports is no reason why they should not play some game.

Parents should not feel it beneath their dignity to enter into the games of their children, Miss Somers believes. Ball, hide and go seek, or tag are good games. Volley ball can be played by two persons or a dozen. The game of quoits will attract a person out of doors every night during the summer if he will allow himself to get interested in it.

The benefits from this kind of play are incalculable, says Miss Somers. They benefit the health, they bring joy and relaxation from mental cares and they increase the admiration and respect that a child has for his parents.

The adult who can throw a good ball, or is fast enough on his feet to dodge the pursuer in a game of tag is a different person to the child. He is now more or less on the child's own level and there is a new feeling of companionship.